

## NOTES FROM THE ROYAL BOTANIC GARDEN EDINBURGH

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### NOTES ON SOME PLANTS OF SOUTHERN AFRICA CHIEFLY FROM NATAL: IX\*

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**ABSTRACT.** Sixty-four items are annotated. Forty-three are new taxa, in the genera *Cineraria* (1), *Eumorphia* (1), *Helichrysum* (24), *Petalacte* (1), *Senecio* (6), *Heliophila* (1), *Sebaea* (1), *Hesperantha* (2), *Scilla* (1), *Trachyandra* (1), *Manulea* (3), *Sutera* (1). *Helichrysum harveyanum* Wild is a new name for *H. subulifolium* Harv. non F. Muell., and *Hesperantha huttonii* (Bak.) Hilliard & Burtt is based on *Acidanthera huttonii* Bak. Species-reductions are made in *Senecio*, *Albuca*, *Bulbine*, *Eriospermum*, *Sutera*, *Alepidea* and *Peucedanum*. The typification of *Alepidea* and *A. longifolia*, and the sectional division of *Alepidea* are discussed: some species names often attributed to O. Kuntze are shown to be invalid provisional names at this rank. A natural hybrid in *Sutera*, *S. brevifolia* × *S. pristisepala*, is recorded. *Cardamine flexuosa* With. and *C. trichocarpa* A. Rich. are reported from S Africa and Natal for the first time; *Bulbine filifolia*, *Albuca fastigiata*, *Peucedanum upingtoniae* and 23 of the new species are further additions to the Natal flora.

Most of the work reported in this instalment falls into one of two somewhat overlapping categories. The items in *Helichrysum* and *Umbelliferae* are contributory to wider studies covering southern Africa (i.e. south of the Limpopo) as a whole. In *Helichrysum* many of the species newly described belong to the group with large yellow heads and come from the eastern Transvaal. Most Natal representatives had already been elucidated (Hilliard, *Compositae in Natal*, 135-254, 1971). It was interesting to find how few of these also occur in the Transvaal. We are grateful for permission to publish two names, *Helichrysum edwardsii* Wild *sp. nov.* and *H. harveyanum* Wild *nom. nov.* given by Professor Hiram Wild in his preliminary manuscript for *Flora Zambesiaca* but not published at the time of his premature retirement through ill health. These names are needed for use in South Africa.

All except a few of the remaining items are relevant to the floristic survey of the southern Natal Drakensberg, and adjacent Lesotho plateau, on which we are working. They emphasise the amount of taxonomic research

\* Continued from *Notes RBG Edinb.* 37: 325 (1979).

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that is needed before the affinities of the Drakensberg flora can be satisfactorily discussed.

# COMPOSITAE

**304. *Cineraria grandibracteata* Hilliard, species nova** *C. albicanti* N.E. Br. affinis sed capitulis solitariis, pedunculis insigniter bracteatis, acheniis glabris facile distinguitur.

Herba perennis, interdum fruticosa, ad 45cm alta; caules simplices vel e basi ramosi, lignosi sed debiles, flexuosi, basi saepe decumbente vel prostrata et radicante, partibus juvenilibus albo-tomentosis foliatis. *Folia* petiolis gracilibus exauriculatis albo-tomentosis ad 4.5cm longis praedita; lamina supra araneosa glabrescens, subtus albo-tomentosa, ad 3×4cm, ambitu reniformis, leniter lobata, lobis grosse dentatis, basi saepe cordata vel interdum subtruncata vel in foliis superioribus redactis cuneata. *Capitula radiata, solitaria vel rarissime* 2–3 ad apices ramulorum in pedunculis insigniter bracteatis corymbose disposita; bractee pedunculi ad 20×3(–5)mm, lineares vel anguste ellipticae ut folia tomentosae deorsum aut abrupte aut 1–2 intermediis in folia transeuntes. *Involucri* bractee c.8–12, 7–8mm longae, albo-tomentosae, flores disci plus minusve aequantes. *Flores* radii 8–12, limbo c.5–7×3mm, ut flores disci vivide flavi. *Achenia* 2–3mm longa, glabra.

Type: Natal, Richmond distr., ridge leading to Peak of Byrne, c.1500m, Hilliard 8055 (NU holo.; E,K,M,MO,PRE,S iso.).

NATAL. Estcourt distr., N face of Kamberg, c.1900m, Wright 198(E,NU). Lions River distr., Mt Gilboa, 1200–1525m, Wylie comm. Wood 7809 (E); Fort Nottingham Commonage, c.1675m, Hilliard & Burt 10327 (E,K,NU,S). Mpendhle distr., Mpendhle, c.1500m, Huntley 164(NU); Mpendhle to Nhlosane road, 1765m, Edwards 2515(NU); near Boston, Wood 9879(NH). Richmond distr., Byrne, 900m, Wood 1895 (K,NH); ibidem, Wood 476(BM); ibidem, Galpin 11987 (K,PRE). Polela distr., Amawahqua, 1800–2100m, Wood 4590(K). Alfred distr., summit Ngeli, 2250m, Tyson 1283(K). Without precise locality, 1862, Cooper 2604(E).

*C. grandibracteata* grows among rock outcrops on grassy mountain slopes, and is then a rather straggly plant, spreading by runners, and clinging to the shelter of the rocks. At Byrne, where road making had tumbled together a mass of boulders mixed with rich soil, rounded bushy clumps had developed, indicating that well-grown plants, with their neat green and white leaves and many medium-sized heads, have some horticultural potential. They flower in autumn, between March and May.

The species is dealt with as *Cineraria* sp.B by Hilliard (*Compositae in Natal* 387, Fig. 15 Ha,b, 1977), where the leaves are illustrated.

**305. *Eumorphia sericea* Wood & Evans subsp. *robustior* Hilliard & Burt, subspecies nova** a typica habitu robustiore (frutice 1–2m alta), foliis tenuius sericeis, corona achenii magis evoluta distinguenda.

Type: Cape, Elliot distr., 3127 BB, Fetcani Pass, c.7500ft, common bush to 5ft on slopes and especially in rock-fall scrub, white rays, yellow disc, 22 i 1979, Hilliard & Burt 12331 (NU holo.; E iso.).

CAPE. Barkly East distr., Rhodes to Naude's Nek, c.7900ft, shrubby to 4ft, at foot of cliffs with *Euryops tysonii*, *Printzia nutans* &c, 22 ii 1971, Hilliard & Burt 6732 (E,NU); Naude's Nek, c.8000ft, shrub to about 2½ft in thick mixed shrub community above river and also along river bank and rocky water courses, rays white occasionally tinged pink on back, 28 xi 1971, Hilliard 5213 (NU,E,K,PRE,S,M,NBG,CO); Doodmans Krans Mt, c.8640ft, by streamlet, shrub 3–4ft, rays white, 7 iv 1904, Galpin 6699 (NH,PRE).

Because of the thinner indumentum on the leaves, *Eumorphia sericea* subsp. *robustior* gives the appearance of being a green bush, whereas the denser hairs of subsp. *sericea* make it grey; in addition subsp. *robustior* is decidedly more robust though there probably can be an overlap in actual height. The achene of subsp. *sericea* is crowned by a thickened slightly lobulate rim; in one or two specimens (e.g. Mont aux Sources, 19 iii 1946, Schelpe 1355, NU) this is developed into a small corona; in subsp. *robustior* the corona is always well developed.

This plant merits recognition because of its distinctly different appearance, and is given subspecific rank because it seems to represent the species at the southern end of its range. *E. sericea* subsp. *sericea* is known from Sani Pass northwards to Mont aux Sources.

*E. sericea* subsp. *robustior* overlaps with *E. prostrata* Bolus at least in the Naude's Nek area. That species, which may be erect or prostrate, is easily distinguished by its more silky appressed indumentum, absence of receptacular paleae (or 1 or 2 only present), and minutely papillose achenes.

### 306. *Helichrysum albanense* Hilliard, nom. et stat. nov.

Type: Cape, Albany, between Riebeeck East and Grahamstown, Burchell 3534 (G-DC, lecto.; K,PRE).

Syn.: *H. subglomeratum* Less. var. *imbricatum* DC., Prodr. 6: 186 (1838); Harv. in Harv. & Sond., Fl. Cap. 3: 236 (1965); Moeser in Bot. Jahrb. 44: 249 (1910); Hilliard & Burt in Notes RBG Edinb. 32: 362 (1973). Lectotype as above.

*H. albanense* is easily distinguished from *H. subglomeratum* by its habit: it is a stoloniferous perennial herb sending up uniformly leafy flowering stems from the woody subterranean runners, while *H. subglomeratum* produces rosettes of leaves on the crown of a small woody stock from which the flowering stems arise. In habit and general facies *H. albanense* much resembles *H. glomeratum* Klatt, but can be distinguished by its leaves, elliptic and subobtus, not lanceolate and acute to very acute, and by the individual heads, which are turbinate rather than cylindric in shape and contain 8–12 flowers, not 5–6.

*H. albanense* is recorded only from the E Cape from Queenstown southwest to Albany and Humansdorp districts; *H. glomeratum* ranges from the E Transvaal through Natal and the Transkei to the Amatola Mountains in the E Cape; *H. subglomeratum* is widely distributed from Angola and Zimbabwe southwards.

### 307. *Helichrysum albilanatum* Hilliard, species nova *H. setosae* Harv. affinis, sed foliis griseo-lanatis facile distinguitur; *H. buchananii* Engl.

etiam affinis sed capitulis majoribus (floribus plus quam 750, nec minus quam 600) in paniculam corymbosam pauci-capitulatam dispositis, et pappi setis basi ciliis patentibus inter se cohaerentibus (nec liberis ciliis paucis vel nullis) differt.

Suffrutex ad 1m altus, caudice alabastra vegetativa gerente; caules e basi numerosi fasciculos rotundatos formantes, lignosi, fragiles, virgati, supra in inflorescentiam compositam furcati, lana tenui et appressa argenteo-grisei, pilis longis rubris patentibus glandulosis etiam praediti, crebre foliati. *Folia* plerumque 35–60 × 11–20mm, 20–40 × 6–16mm in ramis floriferis, prope capitula minora, lanceolata, acuta vel breviter acuminata, basi plus minusve cordato-amplexante, supra plerumque appresse lanata sed lana interdum carente et deinde tantum glanduloso-setosa, infra dense et appresse argenteo-griseo-lanata pilis longis rubris glandulosis etiam praesentibus. *Capitula* heterogama, (10–)12–13mm longa, (20–)25–28mm trans bracteas radiantes, depresso-globosa, plura in paniculam terminalem laxam foliatam corymbosam disposita, vel in ramulis lateralibus subsolitaria. *Involucris* bractearum c.9-seriatae, gradatae, imbricatae, interiores flores multo superantes, nitidae, vivide luteae, interdum externe pallide brunneo-suffusae. *Receptaculum* breviter favosum. *Flores* c.750–950, 90–125 feminei, 640–850 hermaphroditi. *Achenia* 1mm longa, glabra. *Pappi* setae numerosae, corollam aequantes, apicibus subplumosae, medio scabridae, basi ciliis patentibus inter se cohaerentes.

Type: Transvaal, 2530 BA, 8km from Lydenburg on Sabie road, rocky grassland, 5 iii 1981, *Hilliard & Burt* 14193 (NU holo.; E,K,M,PRE,S iso.). TRANSVAAL. Pilgrim's Rest distr., Mariepskop, iv 1932, *Van Son* TM 30800 (PRE, Z); ibidem, Bedford footpath, 5 vii 1961, *van der Schijff* 5572 (PRE); Mt Sheba Nature Reserve, 1950m, i 1977, *Kerfoot et al.* 74 (J); Ohrigstad Nature Reserve, 5800ft, 18 ii 1972, *Jacobsen* 2377 (PRE); ibidem, 20 iv 1976, *Theron* 3577 (PRE); between Lydenburg and Sabie, 24 iv 1934, *Pole Evans* 3821 (K,PRE); Rosehaugh, vii 1919, *Rogers* 23013 (Z). Lydenburg distr., bei der Stadt Lydenburg, i 1886, *Wilms* 712 (BM,E,G); Lydenburg, Sterk Hill, 17 vi 1903, *Burt* 452 (BOL,PRE); near Lydenburg, farm Zwagershoek, i 1930, *Obermeyer* 218(PRE); upper slopes 'The Kloof', 5600ft, 1 iii 1933, *Galpin* 12207 (BOL,PRE). Belfast distr., Belfast Commonage, 31 i 1929, *Hutchinson* 2745 (BOL,K,PRE); Rietvlei, 12 vi 1932, *Smuts* 19 (K,PRE); N of Dullstroom, Kliprivier, iii 1937, *van der Merwe* 1313 (PRE); Dullstroom, 2000–2100m, 30 i 1959, *Werdermann & Oberdieck* 2054 (K,PRE); 37km from Lydenburg on Dullstroom road, dolerite outcrop, 5 iii 1981, *Hilliard & Burt* 14202 (E,K,NU,PRE).

*H. albilanatum* will be found in herbaria under *H. decorum* DC., but that species, which is confined to the coastal parts of the Transkei, Natal and Moçambique, is easily distinguished by its differently shaped leaves, not nearly so silvery as those of *H. albilanatum*, and its larger heads measuring c.25–32mm across the radiating bracts and containing at least 900 flowers.

**308. *Helichrysum ammitophilum*** Hilliard, *species nova* *H. dregeano* Sond. & Harv. affinis sed caulibus simplicibus (nec multiramosis) capitulis numerosis (nec perpaucis) ad apices ramorum aggregatis, floribus femineis hermaphroditis numero plus minusve aequantibus (nec dimidio vel parte majore paucioribus).



Herba perennis, caudice tenui repente lignoso; caules caespitosi, simplices vel ramosi, erecti ad 15–20cm, albo-pannosi, dense foliati. *Folia* plerumque 8–15 × 0.5–1mm, sursum paulo minora, suberecta, imbricata, linearia, apice acuto mucronato interdum valde recurvo basi lata amplectente, marginibus revolutis, infra albo-pannosa, supra indumento tenuiter papyraceo induta. *Capitula* heterogama, oblongo-campanulata, c.3 × 2mm, numerosa, in fasciculos solitarios terminales densos 10–15 (–30)mm diam. aggregata. *Involucri* bracteae c.4-seriatae, lana tenui contexta, gradatae, dense imbricatae, interiores floribus fere aequales, pellucidae, stramineae, apicibus bubalinis interdum purpurascens obtusis, crispato-denticulatae, leviter squarrosae. *Receptaculum* breviter dentatum. *Flores* 18–31, 8–15 feminei, 9–18 hermaphroditi, feminei interdum hermaphrodites aequantes vel superantes, vivide lutei. *Ovaria* pilis duplicibus, sub aqua mucilaginea; achenia non visa. *Pappi* setae numerosae, corollam aequantes, scabridulae, basi ciliis patentibus inter se cohaerentes.

Type: Orange Free State, Harrismith, Queen's Hill, 1675m, 20 ii 1970, Hilliard 4954 (NU holo.; E,K,S,MO,M,PRE iso.).

ORANGE FREE STATE. Harrismith, Wood 4791 (BM,G,K,NH,PRE); 4 miles from Ficksburg on Clocolan road, 30 i 1945, Acocks 11200 (PRE); Molmonspruit, Rehmann 3918(Z); 6 miles SE Bethlehem on Clarens road, 1675m, 13 ii 1967, Scheepers 1382 (PRE).

CAPE. Witteberg, Cooper 617 (BM,E,K,TCD,Z); 6 miles from Dordrecht on Queenstown road, 1675m, 26 ii 1946, Story 913 (PRE).

LESOTHO. Leribe, 1500–1800m, Dieterlen 502 (K,PRE,SAM,Z); Maseru distr., Roma, 10 iii 1975, Schmitz 1496 (ROML); road to Maseru, ii 1975, Schmitz s.n. (ROML); Thaba Bosiu, c.1800m, on top of Cave Sandstone plateau, short dry vegetation of *Helichrysum dasycephalum* and *Cliffortia*, 1 iii 1978, Schmitz 8207 (ROML).

When Harvey described *H. dregeanum* (in *Fl. Cap.* 3: 256, 1865) he cited Cooper 617, which is quoted above, and remarked 'Mr Cooper's specimens are rather less woolly, more luxuriant, and with as many as 12–20 heads in a corymb'. *H. ammitophilum* does indeed differ from *H. dregeanum* in all these points; in addition, the proportion of female to hermaphrodite flowers is different, female flowers nearly equalling hermaphrodite, or sometimes slightly exceeding them, whereas in *H. dregeanum* there are two to three times as many hermaphrodite flowers as female.

The natural habitat of *H. ammitophilum* is grassland over sandstone; the epithet means sandstone-loving. From collectors' notes, it also appears to grow frequently along road sides. It flowers in January and February.

**309. *Helichrysum aureolum* Hilliard, species nova *H. cooperi* Harv. affinis,** sed habitu perenni foliis basi non decurrentibus, capitulis plerumque majoribus 24–28mm trans bracteas radiantes metientibus (nec 15–25mm), bracteis extra distincte aureo-brunneis (nec omnino aureis nec extra levissime brunneo-tinctis) distinguitur.

Suffrutex, caudice robusto lignoso alabastra vegetativa emittente; caules floriferi e basi plures vel multi, inferne simplices, superne in inflorescentiam compositam ramosi, usque ad c.1m alti, pilis rubris vel purpureis

glanduloso-setosi, plantis juvenilibus etiam albo-lanatis, crebre foliati, aromatici. *Folia* plerumque 50–90 × 15–38mm, in inflorescentiae ramulis minora, lanceolata vel oblongo-lanceolata, apice acuto obtuso, basi lata cordato-amplectente, utrinque glanduloso-setosa, marginibus et linea media saepe insuper albo-lanata. *Capitula* heterogama, depresso-globosa, c.12–13mm longa, 24–30mm trans bracteas radiantem, plura in paniculam corymbosam apertam patentem disposita, ramulis paniculae saepe simplicibus vel iterum semel vel bis ramosis foliatis. *Involucrum* bracteae c.9-seriatae, gradatae, imbricatae, interiores flores multo superantes, nitidae, intra vivide aureo-flavae, extra aureo-brunneae. *Receptaculum* breviter alveolatum. *Flores* c.900–1000, 125–140 feminei, 775–875 hermaphroditi. *Achenia* c.1mm longa, cupiformia, glabra. *Pappi* setae numerosae, corollam plus minusve aequantes, apicibus barbellatis, medio scabrido, basibus ciliis aut inter se cohaerentibus aut non.

Type: Transvaal, 2530 BA, Sabie to Lydenburg, Long Tom Pass, Whisky Spruit, c.1980m, iii 1981, *Hilliard & Burt* 14365 (NU holo.; E,K,PRE iso.). TRANSVAAL. 2330 CC, Tzaneen distr., New Agatha Forest Reserve, ±1km E of Steilkop, 1600m, 24 iv 1971, *Muller & Scheepers* 59 (PRE). Pilgrim's Rest distr., Mariepskop, iv 1932, *Van Son* s.n. TM 30798 (PRE); Clewer Falls, 5 vii 1930, *M. Moss* sub *Moss* 18810 (J); Pilgrim's Rest, xi 1915, *Rogers* 18641 (PRE). 2530 BA, Lydenburg distr., Hartebeestvlakte, 6300ft, 16 v 1979, *Mohle* 26 (PRE); 12½ miles SE of Lydenburg, 5250ft, 1 viii 1966, *Morris* 10 (PRE); Lydenburg, i 1895, *Wilms* TM 5783 (PRE). 2530 AC, between Lydenburg and Dullstroom, c.1980m, 5 iii 1981, *Hilliard & Burt* 14206 (E,K,NU,PRE). 2530 BB, Sabie, Vertroosting Nature Reserve, c.4600ft, 5 viii 1968, *Edwards* 4042 (PRE); Sabie, iv 1916, *Rogers* 18641 (J). 2530 BD, Witklip Plantation, 3800ft, 2 vii 1973, *Kluge* 61 (NBG, PRE). 2530 DA, Starvation Creek Nature Reserve, 3 ii 1978, *Kluge* 1187 (PRE). 2530 DA, near Machadodorp, Schoemanskloof, c.1525m, 18 iii 1981, *Hilliard & Burt* 14402 (E,K,NU,PRE); near Machadodorp, Elandshoogte, 4 ii 1978, *Richardson* 84(NU).

SWAZILAND. Forbes Reef, 5000ft, v 1915, *Roberts* s.n. TM 14679 (PRE); Mbabane distr., Palwane Valley, c.3500ft, 10 iv 1956, *Compton* 25878(PRE); Pigg's Peak distr., Havelock road, 4000ft, 24 v 1958, *Compton* 27787 (PRE).

*H. aureolum* is allied to both *H. cooperi* Harv. and *H. setosum* Harv. and will be found in herbaria under both names. It somewhat resembles *H. setosum* in its open compound inflorescence, but the leaves on the inflorescence branches are reduced and distant near the heads, whereas in *H. setosum* the leaves are relatively large and crowded and closely invest the heads. Also, the glandular hairs on the inflorescence branches are always red or purplish in *H. aureolum*, while they are colourless or yellowish in *H. setosum*.

**310. *Helichrysum aureum* (Houtt.) Merr. var. *argenteum* Hilliard var. *nova***, caulibus et foliis laxe argenteo-griseo-lanatis, lana nec tenui nec ad margines et lineam mediam ut in var. *aureo* restricta.

Type: Transvaal, Wakkerstroom Commonage, c.1800m, mountain grassland, 20 xii 1979, *Devenish* 1951 (NU holo., E iso.).

TRANSVAAL. Wakkerstroom distr., Wakkerstroom Commonage, i 1922, *Van Dam* TM 24338 (PRE); ibidem, 19 ii 1917, *Beeton* 199 (PRE); farm 'Oshoek', 6800ft, 26 xii 1960, *Devenish* 378 (PRE); ibidem, 10 xii 1966, *Devenish* 1217 (PRE).

This is a very distinctive and robust variant of *H. aureum* in which the stems, as well as the radical and cauline leaves, are loosely enveloped in silvery-grey wool. The heads may be solitary or up to six corymbosely arranged, and measure c.30–35mm across the radiating bracts, which are bright golden yellow.

**311. *Helichrysum difficile* Hilliard, species nova *H. cooperi* Harv. affinis sed habitu perenni (nec bienni), foliis caulinis plerumque brevioribus angustioribusque 50–70(–80) × 8–20(–26)mm (nec 65–130 × (15–)20–45mm), capitulis plerumque majoribus (20–)23–28mm trans bracteas radiantes (nec 15–25mm) metientibus differt.**

Herba perennis, caudice saepe alabastra vegetativa emittente; caules e basi solitarii vel 2–6, plerumque infra ramis inflorescentiae simplices et c.75–150cm alti (ei plantarum praecocium breviores), glandulosi-setosi, superne interdum insuper tenuiter arachnoidei, omnino foliati sed foliis inferioribus anthesi emarcidis. *Folia* plerumque 50–70(–80) × 8–20(–26)mm, in ramis inflorescentiae minora, oblonga vel oblongo-lanceolata, summa lanceolata, acuta vel acuminata, mucronata, basi cordato-amplectente breviter decurrente, utrinque glanduloso-setosa, marginibus costaque saepe insuper subtus albo-lanata. *Capitula* heterogama, depresso-globosa, c.10–15mm longa, c.(20–)23–28mm trans bracteas radiantes, pauca vel multa in paniculam foliatam patentem corymbosam disposita. *Involucris* bracteae c.9-seriatae, gradatae, imbricatae, flores multo superantes, nitidae, vivide luteae. *Receptaculum* breviter alveolatum. *Flores* c.720–1130; 55–100 feminei, 800–1025 hermaphroditi. *Achenia* 1mm longa, cupiformia, glabra. *Pappi* setae multae, corollam aequantes, apicibus barbellatae, medio scabridae, basi ciliis patentibus inter se cohaerentes.

Type: Transvaal, 2430 DD, Graskop, 2km from town on road to Blyde River Canyon, marsh, 14 iii 1981, *Hilliard & Burt* 14335 (NU holo.; E,K,M,MO,PRES iso.).

TRANSVAAL. 2530 AB/AD, Lydenburg to Dullstroom road at c.34km, marshy grass slopes, 17 iii 1981, *Hilliard & Burt* 14395 (E,K,NU,PRES). 2529 BC, Middelburg distr., farm Welverdiend, 19 iii 1981, marsh, *Hilliard & Burt* 14418 (E,K,NU,PRES). 2530 BB, Witklip, marsh below Witklip rock, 8 iii 1981, *Hilliard & Burt* 14247 (E,K,M,NU,PRES). 2530 AD,N of Machadodorp, c.1½km from Lydenburg Nelspruit fork, streamside marsh, 18 iii 1981, *Hilliard & Burt* 14409 (E,K,NU,PRES). 2530 BB, Mac Mac Pools, streamside marsh and marshy ground on grass slopes, 16 iii 1981, *Hilliard & Burt* 14384 (E,K,NU,PRES). 2530 AB, between Lydenburg and Dullstroom, Klipsteen, marsh between road and railway, 17 iii 1981, *Hilliard & Burt* 14394 (E,K,NU,PRES). 2529 AD, Witbank district, Loskop, Irrigation Dam, hills on E side of dam, streamside, 30 iv 1944, *Mogg* 17305 (NU,PRES). Barberton, summit Saddleback Mountain, iii 1891, *Galpin* 1313 (BOL,PRES). Pretoria distr., Irene, edge of watercourse, iv 1930, *Obermeyer* 443 (PRE). 2531 CC, Duurstede Farm, above dam, 13 iv

1974, *de Souza* 464 (PRE). 2527 CA, Rustenburg Nature Reserve, grassland near river, 24 iv 1970, *Jacobsen* 956 (PRE). 2628 CB, Heidelberg distr., Suikerbosrand Nature Reserve, vlei, 14 iv 1970, *Lambrechts* 306 (PRE). Florida, 22 iv 1928, marsh, *Moss* 16753 (J); Van Wyk's Rust, 18 iv 1930, streamside, *Moss* 18870 (J).

SWAZILAND. Mbabane distr., Forbes Reef road, 4000ft, 24 ii 1956, *Compton* 25642 (PRE); 3 miles NE of Forbes Reef, 13 ii 1962, *Schlieben* 9546 (PRE).

The specific epithet derives from the difficulty in distinguishing this species from *H. cooperi* in absence of information on habit in particular.

**312. *Helichrysum edwardsii* Wild, species nova *H. decoro* DC.** affinis sed foliis caulinis oblongis vel ovatis infra medio latissimis (nec oblongo-lanceolatis vel elliptico-lanceolatis plerumque supra medio latissimis nec in caulem decurrentibus), foliis superioribus glandulosis tantum vel lana marginibus et linea media restricta (nec utrinque persistenter lanatis vel araneosis), involucri bracteis externe laete aureo-brunneis (nec uniformiter vivide luteis).

Herba biennis vel perennis, aromatica, caulibus simplicibus erectis tomentosis usque ad 60cm alta. *Folia* radicalia c.5×1.5cm (immatura?), oblonga, apice acuto, utrinque griseo-tomentosa; caulina ad 6×3cm, ovata vel oblongo-ovata, internodiis brevibus c.1cm longis, apice apiculato-acuminato, basi lata et auriculata, supra in eadem planta vel tenuiter tomentosa vel pilosa, infra dense et pallide griseo-tomentosa. *Inflorescentia* terminalis, corymboso-paniculata, foliata. *Capitula* trans bracteas ad 3.5cm diametro, hemisphaerica. *Involucri* bracteae c.7-seriatae, intus nitide flavae externe brunneo-tinctae, imbricatae, exteriores ovatae vel ovato-lanceolatae c.6mm longae, marginibus saepe plus minusve laceratae, interiores gradatim ad 1.3cm longae, anguste oblongo-lanceolatae, apicibus acutis. *Receptaculum* planum, levissime alveolatum. *Flores* lutei, feminei numerosi, 3.5mm longi, anguste cylindrici dimidio superiore angustati, lobis minutis erectis; hermaphroditi numerosissimi, c.3.7mm longi, aequaliter cylindrici, lobis majoribus leviter patentibus. *Achenia* fusco-brunnea 0.8mm longa, oblongo-cylindrica, plus minusve quadrangularia, processis minutis muriformibus praedita. *Pappi* setae, deciduae, corollam plus minusve aequantes, apicibus leviter barbellatae.

Type: Zimbabwe, Inyanga, Troutbeck, World's View, 9 iv 1966, *Edwards* 950 (SRGH holo.; E & NU photo).

ZIMBABWE. E, Inyanga, iv 1941, *Ferrar* s.n. (SRGH); ibidem, Troutbeck, Little Connemara dam, *Seagrief* in CAH 3102 (SRGH).

*Helichrysum edwardsii* is found in submontane grassland.

**313. *Helichrysum ephelos* Hilliard, species nova *H. subfalcato* Hilliard** affinis sed capitulis homogamis 5mm longis flores 7–10 gerentibus (nec heterogamis 4mm longis flores 10–17 gerentibus), et pappi setis numerosis in dimidio superiore plumosis (nec paucis apicibus tantum plumosis) differt.

Herba perennis, tegetes formans, caulibus primariis stoloniferis radicanibus et ramosis rosulas foliorum numerosas emittentibus, caulibus

floriferis erectis basi decumbentibus 30–40cm longis simplicibus argenteo-sericeis appresse foliatis. *Folia* radicalia rosulata, plerumque 40–100×3–10mm, lineari-lanceolata, apice obtuso vel subacuto, basi lata amplectente, supra indumento papyraceo tenui induta, infra albo-sericeo-pannosa; folia caulina redacta, c.10–30×1.5–3mm, sursum in bracteas transeuntia, linearia vel lineari-lanceolata, acuta vel acuminata, indumento sericeo induta et eo ad caulem contexta, foliorum apicibus tantum liberis. *Capitula* homogama, c.5×2mm, numerosa, inter se pilis sericeis conjuncta in cymam densissimam terminalem c.15–25mm diametro aggregata. *Involucri* bracteae c.3-seriatae, laxe imbricatae, exteriores breviores pellucidae apicibus laete brunneis, interiores subaequales flores aequantes apicibus perobtusis luteis haud radiantibus. *Receptaculum* breviter alveolatum. *Flores* 7–10. *Achenia* 1mm longa, glabra. *Pappi* setae numerosae, in dimidio superiore plumosae, basi nudaе haud cohaerentes.

Type: Natal, Lion's River distr., Fort Nottingham Commonage, c.1675m, 4 v 1977, *Hilliard & Burt* 10329 (NU holo.; E,K,MO,PRES iso.).

TRANSKEI. Mt Ayliff distr., Mt Insizwa, 17 xi 1973, *Hilliard & Burt* 7307 (E,NU), spent heads only.

*H. ephelos* grows at the marshy heads of mountain streams, forming extensive mats on damp earth banks around the margins of the marsh, and on tussocks in it, and from this it takes its name. Its close ally, *H. subfalcatum* Hilliard, favours stony turf slopes at much higher altitudes, and is further distinguished by its conduplicate, somewhat falcate, leaves as well as by details of head structure, which are noted in the diagnosis.

### 314. *Helichrysum harveyanum* Wild, *nom. nov.*

Lectotype: SW Transvaal, Mooye (Mooi) River, *Burke* 411 (K; TCD isolecto.)

Syn.: *H. subulifolium* Harv. in Harv. & Sond., Fl. Cap. 3: 241 (1865) — non F. Muell., *Fragm. Phyt. Austr.* 3: 134 (1863).

### 315. *Helichrysum ingomense* Hilliard, *species nova* *H. cephaloideo* DC. affinis, sed foliis lineari-lanceolatis acutissimis differt.

Herba perennis, caudice tenui lignoso, caulibus floriferis pluribus simplicibus erectis ad 30cm laxo cano-lanatis omnino foliatis. *Folia* radicalia rosulata, usque ad 90×7mm, lineari-lanceolata, apice acutissimo, basi lata amplectente, supra tenuiter pilosa pilis articulatis, subtus incano-lanata; caulina similia sed minora, supra primum tenuiter lanata, sursum in bracteas transeuntia, summa appendice parvo scarioso praedita, erecta, imbricata, brevissime decurrentia. *Capitula* homogama, campanulata, c.5mm longa, plura in glomerulum densum subglobosum ad 2cm diametro basi lana contextum aggregata. *Involucri* bracteae c.6-seriatae, leviter gradatae, laxe imbricatae, flores superantes, radiatae, nitidae, interiores fulvae obtusae apiculatae, exteriores acutae brunneo-apiculatae. *Receptaculum* fimbriis ovaria aequantibus. *Flores* c.33. *Achenia* haud visa; ovaria glabra. *Pappi* setae numerosae, corollam aequantes, apicibus barbellatis, basibus non cohaerentibus (speciminibus juvenilibus).

Type: Natal, Vryheid distr., Ngome Forest Reserve, c.4000ft, 12 i 1969, *Hilliard & Burt* 5925 (NU holo.; E,K,NH iso.).

*H. ingomense* was dealt with as '49. *Helichrysum* sp.' in Hilliard, *Compositae in Natal* (p. 189, 1977). The plant is common around the edges of rock sheets in grassland where water oozes to the surface. It is in flower by mid-January, but February is probably the peak period. *H. cephaloideum* also grows at Ngome, but in drier grassland than *H. ingomense*, which is easily recognized even in the vegetative state by its linear-lanceolate, very acute leaves that soon lose the wool from the upper surface.

**316. *Helichrysum interjacens* Hilliard, species nova *H. melanacme* DC. et *H. polyclado* Klatt affinis, sed ab illo floribus femineis hermaphroditis multo numerosioribus, ab hac bracteis involucri stramineis (nec candidis) differt.**

Herba perennis ramosa vel suffutex c.60cm altus, e basi multiramosus; rami longi, tenues, fragiles, tenuiter albo-lanati, crebre foliati. *Folia* plerumque 15–20 × 2–2.5mm, sursum decrescentia et sub capitulis remotiora, lineari-lanceolata, acuminata, basi lata semiamplectente auriculata, marginibus plus minusve revolutis, utrinque, sed infra densius, arachnoideo-lanata. *Capitula* heterogama, campanulata, 3 × 1.5–2mm, numerosa, in paniculas corymbosas compactas disposita. *Involucri* bractee 5-seriatae, gradatae, imbricatae, interiores floribus plus minusve aequales, laete stramineae, apicibus obtusis semi-pellucidis crispatis minute radiantibus. *Receptaculum* fimbriis ovaria multo superantibus praeditum. *Flores* 13–25, 9–17 feminei, 3–8 hermaphroditi. *Achenia* 0.75mm longa, cylindrica, obscure costata, epapillosa, minute mamillata. *Pappi* setae numerosae, corollis aequales, scabridulae, basibus inter se ciliis patentibus cohaerentes. Type: Natal, Ngotshe distr., near Louwsburg, Itala Nature Reserve, c.1525m, in damp cracks in rock domes, 4 iv 1977, *Hilliard & Burt* 10021 (NU holo.; E,K,M,S iso.).

NATAL. Ngotshe distr., Ngome, c.1200m, among rocks, 31 iii 1977, *Hilliard & Burt* 9852 (E,K,NU,PRE,S).

TRANSVAAL. Lydenburg distr., Lydenburg-Sabie road, Long Tom Pass, c.7000ft, among rocks, 15 iii 1981, *Hilliard & Burt* 14353 (E,NU). Ermelo distr., near Lochiel, 26 iii 1975, *Nixon* s.n. (NU). Wakkerstroom distr., farm Rusfontein, 1800m, disturbed site over dolerite rock, 1 iv 1977, *Devenish* 1696 (E,NU).

SWAZILAND. Mbabane distr., Ukutula, 30 iii 1958, *Compton* 27730 (NBG,NU,PRE); ibidem, 29 iii 1955, *Compton* 25053 (NBG,PRE); hill NE of Mbabane, c.1350m, 14 iii 1956, *Compton* 25786 (NBG,PRE).

*H. interjacens* may be of hybrid origin between the closely allied species *H. melanacme* and *H. polycladum*, and the specific epithet indicates its intermediate position. *H. melanacme* has a wide distribution from the mountains of the SW Cape east and then north-east across the mountains to its northern limit on the SE Transvaal Highveld, nearby Mbabane in Swaziland, and the mountains of N Natal. *H. polycladum* on the other hand is at its southern distributional limit in this area, and ranges north along the mountains to the E highlands of Zimbabwe. *H. interjacens* grows in the area where these two species are sympatric as well as a little further north, having been recorded from Mount Anderson, between Sabie and Lydenburg, south to Itala and Ngome in N Natal. All three species have

been recorded from the environs of Mbabane, while *H. interjacens* and *H. polycladum* are known to grow in close proximity on Mount Anderson, on the farm 'Rusfontein', near Wakkerstroom on the Transvaal-Natal border, and at Itala in N Natal, roughly 100km to the south east. However, all specimens of *H. interjacens* are very similar, and if the species is of hybrid origin it seems likely that they derive from the one original fertile cross.

*H. interjacens* closely resembles *H. melanacme* in general facies, but can easily be distinguished by the fact that the female flowers in a head far outnumber the hermaphrodite, the reverse being true of *H. melanacme*; also, the involucre bracts of *H. melanacme* in the part of its range shared with *H. interjacens* are much darker than those of *H. interjacens*. But there is also a difference in the shapes of the flowers in the two species, most clearly discernible in the female flowers; those of *H. melanacme* are distinctly dilated at the top with 5 well-developed lobes, while those of *H. interjacens* are scarcely dilated and have 3-5, but mostly 4, very small teeth. In this, they resemble those of *H. polycladum*. *H. polycladum* is easily distinguished from both *H. melanacme* and *H. interjacens* by its white involucre bracts and much narrower leaves (mostly up to 1mm broad, not 2mm or more).

**317. *Helichrysum lesliei* Hilliard, species nova *H. aureo* (Houtt.) Merr.** affinis sed ab omnibus varietatibus ejus foliis caulinis ovatis vel late lanceolatis cordato-amplexantibus et inflorescentia aperta foliata facile distinguitur.

Suffrutex molli-lignosus, caudice robusto usque ad 2cm diametro lignoso rosula foliorum coronato; caules floriferi plures, axillares, erecti, ad 60cm alti, sub inflorescentia composita simplices, dense et laxo albo-lanati, crebre foliati. *Folia* radicalia usque ad 15×4cm, oblongo-lanceolata, apice subacuto, marginibus leniter undulatis; caulina plerumque 3.5-5×(1.5-)2-4cm, in ramis inflorescentiae minora, ovata vel late lanceolata, apice obtusissimo vel subacuto, basi lata cordato-amplexante, utrinque laxo cano-lanata. *Capitula heterogama*, 10-14mm longa, 20-30mm trans bracteis radiantibus, depressa-globosa, 2 vel plura in paniculam corymbosam foliatam apertam disposita. *Involucri* bracteis c.9-seriatae, gradatae, imbricatae, interiores flores multo superantes, nitidae, vivide luteae, exteriores extra pallidissime brunneo-suffusae. *Receptaculum* breviter alveolatum. *Flores* c.700-1000; c.140 feminei, 560-830 hermaphroditi. *Achenia* c.1mm longa, cupiformia, glabra. *Pappi* setae multae, corollam aequantes, apice barbellatae, medio scabridae, basi ciliis minutis patentibus praeditae inter se aut cohaerentes aut non.

Type: Transvaal, Lydenburg distr., 16 miles S of Lydenburg, Kemp's Heights, 6200ft, rocky quartzite slopes, 21 i 1954, Codd 8313 (PRE holo.; K iso.).

TRANSVAAL. Belfast distr., near Machadodorp, Elandshoogte, iv 1978, Richardson 12 (E,K,NU); ibidem, 8 iii 1981, Hilliard & Burt 14171 (E,K,M,MO,NU, PRE,S). Barberton distr., on road Ngondwana-Kaapschehoop, 17km from former, 4100ft, 6 i 1978, Jacobsen 4831 (PRE). 17 miles NW of Johannesburg, farm Driefontein 81, 4900ft, Swaziland System Kopjes, 16 vii 1954, Mogg 23407 (J).



The specific epithet honours Dr L. E. Codd, notable South African botanist and a collector who has broken much new ground in the eastern Transvaal.

**318. *Helichrysum longinquum* Hilliard, species nova *H. pilosello* (L.) Less. affinis sed caudicis apice glabro (nec brunneo-sericeo-lanato), foliis infra haud reticulatis, involucri bracteis fulvis (nec brunneis) facile distinguitur.**

Herba perennis, caudice parvo stolones tenues emittente; radices fusiformes; caulis florifer terminalis, solitarius, simplex, 20–30cm altus, albo-lanato-pannosus, remote bracteatus. *Folia* c.4–6, solo appressa, 25–30 × 18–25mm, obovata vel suborbicularia, ad basin latam amplectentem paulo angustata, supra pilis longis crassiusculis multicellularibus induta, subtus tenuiter albo-pannosa, mox glabrescentia, prominenter 5-nervia, nervulis lateralibus occultis; bractee paucae, remotae, parvae, oblongae vel lanceolatae, uti folia pilosae sed lana persistente. *Capitula* homogama, campanulata, c.4 × 4mm, c.15–25 in glomerulum terminalem densum aggregata, basibus lana alba contexta. *Involucri* bractee c.5-seriatae, imbricatae, subaequales, flores plus minusve aequantes, opacae, stramineae vel fulvae, apicibus paulo fuscioribus obtusissimis erosio crispatis vix radiantibus. *Receptaculum* fimbriis ovaria multo superantibus praeditum. *Flores* 19–26, lutei. *Ovaria* 0.75mm longa, glabra; achenia haud visa. *Pappi* setae numerosae, corollam aequantes, scabridae, basi ciliis patentibus inter se valde cohaerentes, interdum etiam leviter conjunctae.

Type: Natal, Underberg distr., Cobham Forest Reserve, Upper Polela cave area, c.2285m, short stony grass slopes, very locally plentiful but few in flower, 16 ii 1979, *Hilliard & Burt* 12613 (NU holo.; E,K,PRE iso.).

NATAL. Underberg distr., upper reaches of Mlahlangubo, headwaters of Umzimkulu R., near Wilson's Cave, c.2200m, very common in thin soil on stony ridges and slopes, not yet in flower, 23 xi 1980, *Hilliard & Burt* 13573 (E,NU). Mpendhle distr., Vergelegen Nature Reserve, c.2100m, 2 i 1978, grass slopes, W-facing, yellow heads, *Hilliard & Burt* 11184 (NU); ibidem, c.1800m, 16 xii 1978, *Stewart* 2082 (E,K,NU).

The specific epithet draws attention to the remoteness of the sites where the plant has been found, at three localities in the southern Drakensberg. However, it is easily overlooked as just another yellow-headed grassland *Helichrysum*, and should be sought elsewhere in the Drakensberg. It may be recognized by the basal rosette of small rounded spreading leaves, without conspicuous reticulate venation as in its close ally *H. pilosellum*, and by the remotely bracteate flowering stem terminating in a cluster of tawny-coloured heads.

**319. *Helichrysum mariepsopicum* Hilliard, species nova *H. wilmsii* Moeser affinis sed habitu suffruticoso vel caespitoso (haud diffuso), capitulis minoribus c.12mm longis flores 165–280 gerentibus (nec 13–20mm longis et flores 220–500 gerentibus) distinguitur.**

Herba caespitosa perennis vel suffrutex parvus c.15–20cm altus, caulibus glanduloso-pubescentibus omnino crebre foliatis. *Folia* plerumque 10–30 × 2–5mm, sursum decrescentia et inter se gradatim distantiora in bracteis scarioso-apiculatas transeuntia, oblonga vel lanceolato-oblonga, apice obtuso vel acuto apiculato, basi lata semi-amplexicauli, utrinque glanduloso-

pubescentia, interdum etiam inferne arachnoidea, marginibus et costa griseo-albo-lanata vel lana absente. *Capitula* heterogama, campanulata, c.12mm longa, c.24mm bracteis radiantibus diametro, apicibus ramulorum solitaria. *Involucri* bractee c.10-seriatae, gradatae, imbricatae, interiores flores multo superantes, acutae, nitidae, albae, intimis exceptis castaneo-apiculatae, interdum roseo-tinctae. *Receptaculum* breviter alveolatum. *Flores* 164–277, 10–31 feminei, 13–252 hermaphroditi. *Achenia* 1mm longa, glabra vel pubescentia, humida haud mucilaginea. *Pappi* setae superne barbellatae, basibus haud cohaerentibus.

Type: Transvaal, Pilgrim's Rest distr., Mariepskop, c.2300m, 23 i 1968, *Hilliard* 4726 (NU holo.; E,K,MO,PRE,S iso.).

TRANSVAAL. Pilgrim's Rest distr., Mariepskop, 9 iv 1958, *van der Schijff* 4335A, 4775, 6176 (all PRE); ibidem, 17 xi 1958, *Killick & Strey* 2387 (PRE); Graskop, x 1943, *Holland* 22899 (PRE); 5 miles N of Graskop, 1370m, 13 xi 1947, *Codd & de Winter* 3336 (NU, PRE); Graskop, head of reservoir valley, 14 xi 1937, *Galpin* 14532 (NU,PRE); God's Window rock groups, 1500m, 8 ix 1966, *Davidson & Mogg* 33300 (PRE); top of Kowyn's Pass near Graskop, 1460m, 1 xi 1950, *Codd* 6202 (PRE); ibidem, 9 x 1950, *Prosser* 1498 (PRE); Blyde Reserve near Pirow's grave, 29 ix 1974, *Davidson* 2664 (NU). Lydenburg distr., summit Mt Anderson, 2225m, 24 xii 1932, *Smuts & Gillett* 2375 (PRE); near Mt Anderson, 2070m, 9 iii 1951, *Codd* 6433 (PRE); top of Long Tom Pass, 2130m, 20 i 1969, *Hilliard & Burt* 6011 (E,K,M,MO,NU,PRE,S). Machadodorp, Elandshoogte, 1980m, 22 xi 1977, *Richardson* s.n. (NU); ibidem, 3 iii 1981, *Hilliard & Burt* 14160 (E,NU).

The close relationship between *H. mariepsopicum* and *H. wilmsii* is emphasized by their similarity in leaf form, as well as by their possession of the parti-coloured heads that characterize a whole group of allied species. However *H. mariepsopicum* and *H. wilmsii* differ not only in growth habit and head size, but there is also a significant difference in the colouring of the involucral bracts; those of *H. mariepsopicum* are predominantly white with brown tips giving a speckled effect to the closed head, while the bracts of *H. wilmsii* are almost wholly coloured outside.

The two species are partially sympatric and both favour rocky habitats, particularly near forest margins.

**320. *Helichrysum milleri* Hilliard, species nova** *H. transmontano* Hilliard (infra no. 330) affinis sed foliis oblongis vel oblongo-lanceolatis obtusis vel acutis (nec lanceolatis acutis vel acuminatis) primum utrinque cano-lanatis demum in ramis floriferis lana caduca et foliis tunc glanduloso-setosis (in *H. transmontano* foliis ab initio glanduloso-setosis) differt. *H. milleri* vere, *H. transmontanum* autumnum floret.

Suffrutex ad 1m altus; rami fragiles, glanduloso-setosi, insuper primum tenuiter albo-lanati, lana sub capitulis saepe persistente, foliati. *Folia* plerumque (15–)20–25 × 6–12mm, oblonga vel oblongo-lanceolata, obtusa vel acuta, apiculata, basi lata semiamplectente, utrinque cano-lanata lana in ramulis sterilibus persistente in ramulis floriferis caduca et paginis glanduloso-setosis visibilibus. *Capitula* heterogama, c.15mm longa, 32mm trans bracteas radiantes, depresso-globosa, solitaria vel pauca ad apices ramulorum

lateralium. *Involucris* bracteae c.9-seriatae, gradatae, imbricatae, flores multo superantes, nitidae, laete brunneae. *Receptaculum* breviter alveolatum. *Flores* c.600–700; 30–60 feminei, 570–650 hermaphroditi. *Pappi* setae corollam aequantes, apice barbellatae, medio scabridae, basi laeves. *Achenia* 1.5mm longa, glabra.

Type: Transvaal, Barberton distr., Emlembe Mountain, Devil's Bridge, 5200ft, 26 x 1963, *Miller* 8509 (PRE holo.).

TRANSVAAL. Lydenburg distr., c.9 miles SE of Lydenburg, De Kuilen farm, c.6000ft, 30 xi 1975, *Anderson* A80 (PRE).

SWAZILAND. Pigg's Peak distr., Havelock Mine, 4000ft, marginal to high forest, x 1955, *Miller* 3035 (PRE).

*H. milleri* is easily recognized by its leaves that are grey-woolly on the sterile twigs, but on the flowering twigs are either green and glandular or transitional between wholly woolly and wholly glandular, and by its brown involucre bracts. It seems to grow in the coarse herbage on or near forest margins, and is unusual in that it flowers in spring and early summer; most of the species in this affinity flower in late summer and autumn.

The specific epithet commemorates O. B. Miller, a distinguished Forest officer who worked in both Swaziland and Botswana.

**321. *Helichrysum molestum* Hilliard, species nova** *H. cooperi* Harv. affinis sed habitu perenni (nec bienni), capitulis plerumque majoribus c.22–30mm trans bracteas radiantes metientibus (nec c.15–25mm) distinguitur. Ab *H. diffidili* Hilliard, etiam affini, habitu robustiore, foliis latioribus 18–32mm latis (nec plerumque 8–20mm) recedit.

Herba perennis usque ad 1m alta; caules e basi plures, inferne simplices, superne in inflorescentiam compositam ramosi, robusti, glandulosi-setosi, in partibus summis interdum insuper arachnoidei, crebre foliati. *Folia* plerumque 65–100 × 18–32mm, in ramis inflorescentiae minora, oblonga vel oblongo-ovata, summa ovato-lanceolata, apice acuto mucronato, basi cordato-amplexante, breviter decurrentia, utrinque glanduloso-setosa, marginibus et linea media interdum tenuiter albo-lanata. *Capitula* heterogama, depressa-globosa, c.11–14mm longa, 22–30mm trans bracteas radiantes, multa in paniculam corymbosam magnam foliatam patentem disposita. *Involucris* bracteae c.9-seriatae, gradatae, imbricatae, flores multo superantes, nitidae, vivide luteae. *Receptaculum* breviter alveolatum. *Flores* c.1000–1300; 65–135 feminei, 1035–1235 hermaphroditi. *Pappi* setae multae, corollam aequantes, apice barbellatae, medio scabridae, basi ciliis patentibus inter se cohaerentes.

Type: Transvaal, 2530 BA, Sabie to Lydenburg road, Long Tom Pass, Whisky Spruit, marshy ground by stream, 15 iii 1981, *Hilliard & Burt* 14364 (NU holo.; E, PRE iso.).

TRANSVAAL. Pilgrim's Rest, 3 iii 1936, *Taylor* 1902 (PRE); 2530 BA, Lydenburg side of summit of Long Tom Pass, 15 iii 1981, *Hilliard & Burt* 14372 (E, K, NU); 2530 AC, 40km from Lydenburg on Dullstroom road, wet ground with *Leucosidea*, 5 iii 1981, *Hilliard & Burt* 14209 (E, K, NU, PRE). 2530 DD, W of Barberton – Havelock road, Maid of the Mist Mountain, 7 iii 1981, *Kluge* sub *Hilliard & Burt* 14240 (E, K, NU, PRE).

*Helichrysum molestum* belongs to a tiresome ('molestum') group of

species, easily distinguished in the field, but often difficult to separate in the absence of adequate material and field notes.

**322. *Helichrysum mollifolium* Hilliard, species nova *H. miconiifolio* DC.** affinis sed foliis mollibus quinquenerviis et bracteis involucri obtusis recedit.

Herba perennis; radices tuberis angustis fusiformibus praediti; caudex parvus, stolones tenues emittens; caulis florifer terminalis, solitarius, simplex, c.35–60cm altus, pilis longis multicellularibus praeditus et insuper tenuiter albo-lanatus. *Folia* praecipue radicalia, c.4–6, petiolo tenui fibroso c.2–12cm longo praedita; lamina c.3–12 × 2.5–5cm, late elliptica vel ovato-elliptica, mollis, apice obtuso vel subacuto, apiculata, basi rotundata vel late cuneata, supra pilis longis multicellularibus aspera, subtu conspicue 5-nervia praecipue in nervis pilosa alibi glandulis flavis nitentibus sessilibus praedita, marginibus paulo revolutis; folia caulina similia sed sursum mox sessilia et angustiora, citus in bracteis paucas remotas acuminatas trans-euntia. *Capitula* homogama, campanulata, c.5–6 × 4–5mm, numerosa in paniculam corymbosam laxam vel compactam disposita. *Involucri* bractee c.4-seriatae, leviter gradatae, laxe imbricatae, floribus plus minusve aequales, basibus laxe lanatis, limbo subopaco paulo nitente, exteriores aureo-brunneae, interiores luteae, apicibus obtusis paulo crispatis haud radiantibus. *Receptaculum* fimbriis ovarii bis longioribus praeditum. *Flores* 19–30. *Ovaria* glabra; achenia haud visa. *Pappi* setae numerosae, scabridae, basi pilis patentibus valde inter se cohaerentes et insuper leviter conjunctae.

Type: Natal, Underberg distr., Cobham Forest Reserve, Upper Polela Cave area, c.2850m, 16 ii 1979, *Hilliard & Burtt* 12511 (NU holo.; E,K,PRE,S iso.).

NATAL. Bergville distr., Royal Natal National Park, Tugela gorge above Chain Ladder, c.1830m, common in scrub but few flowering, 6 ii 1982, *Hilliard & Burtt* 15444 (E, NU). Mpendhle distr., southern end of SE ridge from Giant's Castle, c.2700m, 18 i 1968, *Wright* 407 (E, NU); Loteni River valley, 1770m, common on damp slopes in stream valley, not much in flower, 13 i 1982, *Hilliard & Burtt* 15114 (E, NU). Underberg dist., Sani Pass, 2450–2700m, *Grice* s.n. (NU); ibidem, 2580m and seen down to 2310m, wet grass slopes, 17 ii 1982, *Hilliard & Burtt* 15502 (E, NU); 5–7 miles NNW of Castle View farm, headwaters Mlahlangubo River, near Wilson's Cave, 2100m, damp grass slopes, 18 i 1982, *Hilliard & Burtt* 15147 (E, NU); Cobham Forest Reserve near Upper Polela cave, c.2100m, 14 ii 1979, *Hilliard & Burtt* 12555 (E, K, NU); Garden Castle Forest Reserve, Mlambonja Valley, 1950–2130m, common on moist shady grassy banks, often near rocks, 6 i 1982, *Hilliard & Burtt* 14942; ibidem, stream valley above forester's house, 1950m, 4 xi 1980, *Hilliard & Burtt* 13784 (E, K, NU, PRE).

*H. mollifolium* grows in moist, thickly vegetated gullies or depressions running down the mountainsides or on streamside flats, in association with grasses and other perennial herbs, or in forest margin vegetation, and can form large stands due to its stoloniferous habit. In general appearance it is not unlike *H. miconiifolium*, but has soft-textured and prominently

5-nerved leaves distinct from the rather hard 3-nerved leaves of that species, and obtuse, not acute, involucre bracts. It could also be confused with *H. nudifolium* (L.) Less. but again the soft leaves crowded near the base of the stem serve to distinguish it; also, the involucre bracts are a brighter yellow more heavily suffused with brown than they generally are in *H. nudifolium*.

**323. *Helichrysum montis-cati* Hilliard, species nova *H. revolutum* (Thunb.) Less.** affinis sed ramis paucis longis tenuibus, capitulis minoribus  $4 \times 3$  mm in glomerulos congestis, involucri bracteis apicibus crispatis erosis differt. *H. revolutum* ramis virgatis ramulosis brachyblastis foliatis praeditis, capitulis  $4.5-5 \times 4$  mm in paniculas parvas corymbosas dispositis, involucri bracteis apicibus laevibus rotundatis notatum est.

Suffrutex effusus vel erectus ad 1–3 mm, ramis longis e tenuibus cano-pannosis crebre foliatis, foliis in ramulis floriferis remotioribus, foliis (redactis exceptis) demum reflexis. *Folia* 18–40(–60)  $\times$  2–3(–6) mm, linearia, acuta, mucronata, basi lata semiamplectente, marginibus plus minusve revolutis, supra primum arachnoidea, glabrescentia, rugosa, glanduloso-punctata, infra cano-lanato-pannosa. *Capitula* heterogama, campanulata,  $c. 4 \times 3$  mm, numerosa in glomerulos congestos 15–25 mm diam. ad apices ramulorum disposita. *Bractee* involucreales c. 5-seriatae, imbricatae, exteriores breviores, interiores subaequales floribus aequales, apicibus acutis vel obtusis paulo erosis et crispatis recurvis sed vix radiantibus translucentibus pallide aureo-brunneis. *Receptaculum* breviter alveolatum. *Flores* 21–31; feminei 2–7, hermaphroditi 18–27. *Achenia* 1 mm longa, papillosa, sub aqua mucilaginea. *Pappi* setae numerosae, corollam aequantes, scabridae, basi pilis patentibus inter se cohaerentes, mox caducae.

Type: Cape, 3226 BC, Stockenstrom div., Katberg Pass, 28 x 1980, Hilliard & Burt 13261 (NU holo.; E, K, MO, PRE, S iso.).

E CAPE. 3227 CA, King Williams Town distr., Cata Forest Reserve, 5000 ft, grassland and macchia, S aspect, 24 x 1947, Story 3189 (GRA, PRE). 3226 BC, Stockenstrom div., Katberg Pass, 27 xi 1928, Hutchinson 1672 (BM, BOL, PRE mixed with *H. odoratissimum*); ibidem, x 1963, Sidey 3747 (PRE, S). 3227 CA, Hogsback, hillside above forest, 28 x 1946, Esterhuysen 13252 (BOL).

Specimens of *H. montis-cati* have been misidentified as *H. flanaganii*, *H. revolutum* and even *H. rugulosum*, and one collection is mixed with *H. odoratissimum*, to which it does bear a superficial resemblance. *H. montis-cati* grows in rough herbage near forest patches, a habitat also favoured by *H. odoratissimum*. The species has no striking features, but it may easily be distinguished from *H. odoratissimum* by its leaves, clasping but not decurrent in stem wings, by its honeycombed, not fimbriiferous, receptacle, and by its brown, not yellow, involucre bracts; however, in the field, the bright yellow flowers are more conspicuous than the bracts. It can be distinguished from its close ally, *H. revolutum*, by the long slender branches without dwarf leafy axillary shoots, by the smaller congested heads and by the crisped erose tips of the involucre bracts.

**324. *Helichrysum nimbicola* Hilliard, species nova *H. subfalcato* Hilliard** affinis sed indumento tomentoso, capitulis homogamis, pappi setis numerosis superne subplumosis et basi ciliis patentibus valde inter se

cohaerentibus differt: *H. subfalcatum* indumento sericeo, capitulis heterogamis, pappi setis 3–5 tantum superne plumosis basi nudis notatum est.

Herba perennis caespitosa tegetes parvas formans; caules primarii decumbentes, radicanes; floriferi erecti 10–15cm alti, simplices, ad basin crebre foliati, sursum foliis remotioribus ad apices in bracteas trans-euntibus. *Folia* plerumque 25–40 × 4–7mm, dimidio longitudinis petiolari; lamina elliptico-lanceolata, saepe conduplicata et falcata, apice acuto, basi in petiolum latum amplexicaulem angustata, utrinque griseo-pannosa. *Capitula* homogama, cylindrica, 3–4 × 1.5–2mm, numerosa arcte congesta et in glomerulum corymbosum terminalem 15–20mm diam. lana conjuncta. *Involucri* bracteae 3–4-seriatae, gradatae, laxe imbricatae, floribus plus minusve aequales, pellucidae, pallide aureo-brunneae, apicibus obtusissimis concavis haud radiantibus. *Receptaculum* breviter alveolatum. *Flores* 5–6, lutei. *Achenia* 0.75mm longa, pilis duplicibus sub aqua mucilaginem emittentibus. *Pappi* setae numerosae, corollis aequales, in parte superiore subplumosae, basibus ciliis patentibus valde cohaerentibus.

Type: Natal-Lesotho border, Underberg distr., Sani Top, 2850m, 18 ii 1973, Hilliard 5334 (NU holo.; E,K,MO,PRE,S iso.).

NATAL. Bergville distr., top of Mont aux Sources, 11000ft, 29–30 viii 1930, Hutchinson, Forbes & Verdoorn 115 (PRE); Natal-Lesotho border, above Underberg distr., top of Mashai Pass, c.2750m, 7 xi 1977, heads spent, Hilliard & Burtt 10470 (NU).

LESOTHO. Butha-Buthe distr., Tsehlanyane B camp, 2750m, 18 i 1962, Jacot Guillarmod 4223 (RUH).

*H. nimbicola* grows in grey clumps dotting the stony turf along the summit of the high Drakensberg escarpment where the clouds, rolling against the cliffs like heavy surf along a coast, suggested the specific epithet. It is in full flower in February; the specimen collected by Jacot Guillarmod in mid-January is in young bud; that collected by Hutchinson *et al.* in August is nearly spent.

**325. *Helichrysum petraeum* Hilliard, species nova *H. adenocarpo* DC.** affinis sed foliis radicalibus linearibus ad 4mm latis (nec ellipticis vel suborbicularibus, saltem 15mm latis) et capitulis minoribus 10mm longis (nec 15–20mm) differt.

Herba perennis, caudice lignoso rosulis foliorum pluribus coronato; caules floriferi laterales, decumbentes, ad 45 cm longi, laxe ramosi, laxe lanati, foliati. *Folia* radicalia 30–50 × 2–4mm, linearia vel lineari-lanceolata, acuta vel subacuta, mucronata, basi lata papyracea amplectente primo purpurascens, utrinque griseo-lanata; folia caulina c.10–20 × 2–3mm, oblongo-lanceolata, acuta, mucronata, basi paulo angustata, semi-amplectentia, utrinque laxa lanata glabrescentia, insuper glanduloso-setosa. *Capitula* heterogama, campanulata, 10mm longa, c.20mm diam. trans bracteas radiantes, apicibus ramulorum solitaria, paniculam corymbosam apertam formantia. *Involucri* bracteae c.10-seriatae, laxe imbricatae, flores multo superantes, nitidae, acutae, albae, rubro-apiculatae. *Flores* c.120–230; 18–32 femineae, 118–195 hermaphroditi, flavi, interdum rubro-apiculati. *Achenia* non visa; ovaria pilis duplicibus myxogenis induta. *Pappi* setae plures, supra barbellatae, infra nudaе basibus non cohaerentibus.

Type: Natal, Richmond distr., ridge leading to Peak of Byrne, c.1525m, 29 iv 1976, *Hilliard* 8092 (NU holo.; E,K,M,MO,PRE,S, iso.).

NATAL. Richmond distr., Byrne, c.1525m, 31 iii 1932, *Galpin* 11939 (BOL, PRE); ibidem, 18 iii 1978, *Stewart* 2056 (E,K,MO,NU); ibidem, 1884, *Wood* 1905 (BOL). Impendhle distr., near Boston, 3-4000ft, 12 iii 1909, *Wood* 11154 (NU). Sevenfontein, 4-5000ft, 22 iv 1905, *Wood* 9923 (BOL). Nkandla distr., Nkandla, 4-5000 ft, i iv 1903, *Wylie comm.* *Wood* 8850 (PRE, *H. adenocarpum* under the same number).

SWAZILAND. Mbabane distr., Miller's Falls, 6 iv 1956, *Compton* 25862 (M,PRE); Palwane Hills, 19 iv 1956, *Compton* 25900 (M,PRE).

The differences between *H. adenocarpum* and the new species became apparent when they were seen growing together on the mountain top above Byrne. Here, flat sheets of rock outcrop in the grassland, and *H. petraeum* grows around the edges and in the crevices of these sheets, with stems sprawling over the rock. *H. adenocarpum* is plentiful, scattered in the surrounding grassland. The difference in the size of the heads of the two species is very noticeable, and closer inspection shows that the species on the rocks has very narrow erect radical leaves, while the species in the grassland has broad prostrate radical leaves. Unfortunately, radical leaves are rarely collected, but the difference in the length of the heads always serves to distinguish the two species.

The few collections of *H. petraeum*, from widely scattered localities, all have white bracts tipped with crimson; this is interesting, considering the range of bract colour in *H. adenocarpum*. At Byrne, *H. adenocarpum* has wholly crimson bracts, which also helps to draw attention to the presence of two species. Despite the meagre herbarium collections, it is clear that the two must often grow in the same locality: Wylie collected both species under the same number at Nkandla, and *H. adenocarpum* grows at Boston in Natal and Mbabane in Swaziland, whence also came *H. petraeum*.

**326. *Helichrysum qathlambanum* Hilliard, species nova *H. inornato* Hilliard & Burt affinis sed habitu robustiore, foliis radicalibus ambitu dissimilibus, lamina late elliptica acuta basi abrupte deinde gradatim in partem petiolarem angusta (nec lineari-lanceolata acuminata basi regulariter angustata) 5-nervia (nec 3-nervia) distinguitur.**

Herba perennis, caudice tenui (c.4mm diam.) fortasse rhizomatoso; caules floriferi erecti ad c.75cm, solitarii vel bini, simplices, et glanduloso-pilosi et tenuiter lanati, inferne foliati, superne pedunculoidi. *Folia* radicalia pauca, 13-25 x 2.5-5cm, dimidio longitudinis petiolari, lamina late elliptica, apice acuta, basi primum abrupte deinde gradatim in partem petiolarem angustata, basi expansa et amplexicaulia, utrinque glanduloso-pilosa, inferne insuper tenuiter albo-lanata, 5-nervia; folia caulina similia, sursum celeriter minora, angustiora, sessilia, in bracteis paucas remotas lanceolato-acuminatas transeuntia. *Capitula* homogama, cylindrico-campulata, 4 x 3mm, multa in glomerulos congestos disposita, lana contexta capitulum compositum compactum formantia. *Involucri* bractee c. 4-seriatae, subaequales, imbricatae, flores aequantes, non radiantes, subpellucidae, stramineae. *Receptaculum* fimbriis magnis ovaria superantibus. *Flores* 9-13. *Achenia* non visa; ovaria glabra. *Pappi* setae



multae, scabridae, basi ciliis patentibus inter se cohaerentes, interdum insuper leniter conjunctae.

Type: Natal, Underberg distr., Garden Castle Forest Reserve, c.1950m, valley beyond Forester's house, in scrub on steep stony slope, 4 xi 1980, *Hilliard & Burt* 13783 (NU holo.; E iso.).

NATAL. Underberg distr., Garden Castle Forest Reserve, Mlambonja Valley, path to Mashai Pass, 2100–2250m, very common all along wet south-facing slopes and in gullies, 8 i 1982, *Hilliard & Burt* 15026 (E, NU); 5–7 miles NNW of Castle View farm, headwaters of Mlahlangubo River, c.1020m, very common in damp *Leucosidea* scrub by stream, 19 i 1982, *Hilliard & Burt* 15169 (E, NU); ibidem, at least to 2490m, common in damp grassy banks, 20 i 1982, *Hilliard & Burt* 15233; Sani Pass, c.2580m, wet grass slopes, 17 ii 1982, *Hilliard & Burt* 15503 (E, NU).

LESOTHO. Butha-Buthe distr., top of Mota's Pass, c.10,000ft, on rocky slopes, local, 6 ii 1954, *Coetzee* 430 (NBG); Khatibe Camp C, SE facing slope above Tsehlanyane Valley, 8600ft, grass veld, 20 i 1962, *Lubke* 246 (PRE).

*Helichrysum qathlambanum* looks not unlike broad-leaved specimens of *H. nudifolium*, and it is this similarity to a common species that will account for the paucity of records: *H. qathlambanum* must be widespread in the Drakensberg, whose Zulu name provides the specific epithet. It differs from *H. nudifolium* in a number of characters, but its much softer foliage is an easy field character. However, its closest ally is *H. inornatum*.

**327. *Helichrysum rudolfii* Hilliard, species nova** *H. lepidissimo* S. Moore affinis, sed foliis ovatis vel rhomboideo-ovatis apicibus acutis (nec ellipticis vel suborbicularibus apicibus obtusis vel rotundatis), marginibus planis (nec crispatis), involucri bracteis extimis exceptis subaequalibus laevibus vel fere laevibus (nec valde gradatis nec crispatis).

Suffrutex ad 1m altus, ramis albo-griseis pannosis crebre vel in ramulis floriferis remotius foliatis. *Folia* 10–35 × 3–15mm, sursum paulo decrescentia, rhomboideo-ovata vel ovata, gradatim vel interdum abrupte in petiolum tenuem  $\frac{1}{4}$ – $\frac{1}{2}$  longitudinis folii basi expansa semiamplectente angustata, apice acuto vel foliis minoribus acutissimo mucronato, marginibus planis, supra lana tenui persistente induta et sub lana glanduloso-puberula, subtus albo-tomentosa. *Capitula* homogama, campanulata, 5 × 4–5mm, bracteis radiantibus 8–10mm diametro, numerosa, in cymas aggregatas corymbosas terminales disposita. *Involucri* bractee c.5-seriatae, extimae breves, interiores subaequales, laxissime imbricatae, flores paulo superantes, apicibus subacutis vel obtusis laevibus nitidis opacis albis. *Receptaculum* fimbriis ovaria superantibus praeditum. *Flores* 21–32, lutei. *Achenia* 1mm longa, plus minusve cylindrica, obscure et irregulariter costata, glabra. *Pappi* setae numerosae, corollam aequantes, scabridae, basibus pilis patentibus valde cohaerentibus.

Type: Transvaal, 2530 BA, Sabie to Lydenburg, Long Tom Pass, 15 iii 1981, common on rocky banks and low cliffs, *Hilliard & Burt* 14363 (NU holo.; E,K,M,PRE,S, iso.).

TRANSVAAL. Pietersburg distr., Houtbosch, 31 iii 1894, *Schlechter* 4750 (BM,BOL,G,K;PRE mixed with *H. lepidissimum*). Pilgrim's Rest distr.,

Mariepskop, c.1828m, 27 v 1960, *Van der Schijff* 4492 (PRE); ibidem, 1675m, 10 iv 1958, *Van der Schijff* 4351 (PRE); ibidem, 3 iii 1957, *Meeuse* 9987 (PRE). Mount Sheba Nature Reserve, 1950m, 27 vi 1976, *Kerfoot* 7894 (NU). 2430 DD, near Graskop, God's Window, subshrub on rock outcrops, 14 iii 1981, *Hilliard & Burt* 14337 (E,K,NU). 2530 CB, near Machadodorp, Elandshoogte, straggly shrub to 4ft, 3 iii 1981, *Hilliard & Burt* 14172 (E,NU).

*Helichrysum rudolfii* commemorates Rudolf Schlechter who made major contributions to South African botany and who first collected the species in 1894. A specimen from this collection (*Schlechter* 4750) was distributed to the British Museum (Natural History) and bears an annotation by Spencer Moore: 'This is not *H. lepidissimum*. The habit is laxer and the heads are broader with fewer leaves to the involucre. Can it possibly be a species already described?' *H. rudolfii* often grows on rock outcrops with other shrubs through which it may straggle upwards, but in more open sites it forms compact bushes. It is easily distinguished from *H. lepidissimum*, with which it may grow, by its differently shaped leaves that are only glandular-puberulous above, not with the long coarse hairs that are characteristic of *H. lepidissimum*, as well as by differences in the involucre. A third closely allied species, *H. mimetes* S. Moore, resembles *H. rudolfii* in leaf indumentum but differs in leaf shape as well as in the involucre, which is more like that of *H. lepidissimum*.

**328. *Helichrysum scitulum* Hilliard & Burt, species nova** *H. praecurrenti* Hilliard affinis sed ramis longis tenuibus effusis, (nec brevibus dense caespitosis), capitula semper heterogama (nec interdum homogama), achenia papillosa (nec plerumque epapillosa) differt.

Suffrutex diffusus, ramis longis tenuibus effusis crebre foliatis. *Folia* 3–7 × 0.5–1mm, sursum vix decrescentia, imbricata, patentia, paulo recurva, linearia, basi lata semi-amplexante ad caulem indumento contexta, pagina superiore indumento tenui papyraceo, inferiore cana sericeo-pannosa. *Capitula* heterogama, turbinato-campanulata, c.8–10mm longa, bracteis radiantibus 1.6–2cm diametro, solitaria, in ramulis brevibus (1–3cm) erectis dense foliatis, saepe in ramis prostratis approximatis, terminalia. *Involucra* bracteae c.7-seriatae, imbricatae, gradatae; exteriores lanceolatae, acutae, roseae; interiores flores plus minusve aequantes, lanceolatae vel oblongo-lanceolatae, acutae vel obtusae, albae saepe roseo-apiculatae. *Receptaculum* alveolatum. *Flores* 26–38, 3–6 feminei, 21–40 hermaphroditi, lutei, feminei roseo-apiculati. *Achenia* 1mm longa, cylindrica, pilis duplicibus, sub aqua mucilaginea. *Pappi* setae numerosae, corollae aequales, superne scabridae, inferne laeves, basi ciliis patentibus inter se cohaerentes et interdum in fasciculos conjunctae.

Type: Cape, Graaff Reinet distr., S extreme of Renosterberg above Lootsberg railway halt, farm 'Blauwater', c.1800m, 24 xi 1977, *Hilliard & Burt* 10629 (NU holo.; E,K,MO,PRE,S iso.).

CAPE. Lady Grey distr., Witteberg, *Drège* (G–DC,E,PRE). Near Bailey, Andriesberg, 1765m, among rocks, south slopes, 1 xii 1901, *Galpin* 6275 (PRE); Broughton, near Molteno, 1900m, xii 1892, *Flanagan* 1593 (NU, PRE). 3224 AA, Graaff Reinet distr., Koudeveldberge, SE of Doornbosch,

SE slopes near summit with scattered short shrubs and rocks, 1800m, 6 xi 1974, *Oliver* 5219 (PRE); Oudeberg, near Graaff Reinet, 4000ft, 5 xii 1865, *Bolus* 238 (BOL,K). Beaufort West distr., Nieuweveld Mts., 5–6000ft, x 1894, *Guthrie* 3458 (NBG).

This species may be found in herbaria under the name *H. stoloniferum* (L.f.) Willd. The confusion dates back to De Candolle (*Prodr.* 6: 175, 1838), who mistook a specimen of *H. scitulum*, collected by Drège in the Witteberg near Lady Grey, for *H. stoloniferum*. Harvey (*Fl. Cap.* 3: 228, 1865) saw the Thunberg specimen on which the name *H. stoloniferum* is based, but also cited Drège's Witteberg specimen, noting that 'Thunberg's original specimens are more silvery than Drège's'. This is so: the leaves of *H. stoloniferum* are wholly enveloped in silvery silky closely interwoven hairs, whereas those of *H. scitulum* have only a very thin indumentum above through which the green leaf surface shows, and are closely greyish-white felted only below. The heads of *H. stoloniferum* are very much larger than those of *H. scitulum*, both in absolute size (c.15–35mm long, opposed to 8–10mm), and in flower number (58–282, not 26–38).

*H. stoloniferum* is found on the mountains in the western, southern and central Cape; the two species appear to be contiguous only in the region of the Koudeveldberge between Graaff Reinet and Murraysburg; *H. scitulum* then ranges NE across the mountains to the Renosterberg (E end of the Sneeuwberg), the mountains near Molteno (Bamboesberg and Stormberg) and the nearby Andriesberg, and the Witteberg near Lady Grey, but is rarely collected. It favours rocky places, forming loose carpets in the crevices of cliffs or cascading down steep slopes and straggling through grass tufts and other vegetation, a remarkably pretty sight in November and December.

*Hilliard & Burtt* 12167 (E,NU), collected above Joubert's Pass across the Witteberg at c.2400m, is matched by *Hilliard & Burtt* 6741 (E,NU) from Lundean's Nek, also across the Witteberg but about 16km east of Joubert's Pass. It is a coarser plant than the specimens cited above, in that it has larger leaves (up to 12×3–4mm) and larger heads (c.14mm long), but it does not otherwise differ. Both were growing on crumbling basalt cliffs and outcrops; the type of *H. scitulum* was growing on sandstone.

**329. *Helichrysum tongense* Hilliard, species nova** *H. setoso* Harv. affinis sed foliis caulinis anguste oblongis (nec oblongo-ovatis), foliis sub capitulis redactis remotis (nec majusculis et congestis), involucri bracteis semper vivide luteis (nec extra plerumque pallide brunneo-suffusis) et floribus in capitulo pluribus (c.1000–1400, nec c.480–1100) differt.

Herba, probabiliter biennis, usque ad 1.2m alta, aromatica; caulis furcatus, saepe inferne, ramis longis virgatis, glanduloso-pubescentis, primum laxe et tenuiter albo-lanatus lana superne persistente, foliatus. *Folia* plerumque 30–80×7–20mm, in ramis inflorescentiae minora et prope capitula redacta, lineari-oblonga vel oblonga, apice acuto, basi lata semiamplectente, utrinque glanduloso-pubescentia, marginibus et interdum linea media albo-lanata. *Capitula* heterogama, depresso-globosa, c.12–14mm longa, (20–)25–30mm trans bracteis radiantibus, solitaria, terminalia in ramis foliatis longis (plerumque 5–30 cm) corymboso-paniculatum

dispositis. *Involucris* bracteae c.9-seriatae, gradatae, imbricatae, interiores flores multo superantes, nitidae, vivide luteae. *Receptaculum* breviter alveolatum. *Flores* c.1000–1400; 100–340 feminei, 700–1200 hermaphroditi. *Achenia* 1mm longa, cupiformia, glabra. *Pappi* setae multae, corollam aequantes, apice barbellatae, basi ciliis patentibus aut inter se cohaerentes aut non.

Type: Natal, Ingwavuma distr., Ndumu, Usutu flood-plain, 20 ix 1968, Pooley 76 (NU holo., E iso.).

NATAL. Ingwavuma distr., Maputa, Aapiesdraai, 21 v 1975, Van Rensburg 40 (NU); Umbhanga Nek, 29 i 1965, Bourquin 418 (NU). Ubombo distr., Lake Sibayi, 29 iii 1965, Vahrmeijer 677 (PRE). Hlabisa distr., Charter's Creek, 1 v 1957, Lawson 503 (NH); St Lucia Forest Reserve, iv 1968, Adendorff s.n. (NU). Lower Umfolozi distr., Richards Bay, 6 iv 1964, Ward 4934 (NU, PRE); Empangeni, Fatima, 2 ii 1937, Gerstner 2724 (PRE).

SWAZILAND. Hlatikulu distr., Kubuta Estate, v 1920, Pierce 25 (PRE).

MOÇAMBIQUE. Inhaca Island, 29 ix 1957, Mogg 27568 (J,K,PRES); Delagoa Bay, Kuntze s.n. (K); ibidem, Junod 95 (G, Z); Rikatla, Junod 564 (G); Gaza distr., Vila de João Belo, entre Chicumbana e a Barra do Limpopo; 17 vi 1960, de Lemos & Balsinhas 127 (K,PRES).

This species derives its name from Tongaland, the coastal plain that stretches from Moçambique into northern Natal, to which it is very nearly confined.

**330. *Helichrysum transmontanum* Hilliard, species nova *H. setoso* Harv.** affinis sed capitulis majoribus c.17–20mm longis (nec c.10–14mm), pappi setis basi laevibus (nec ciliis parvis patentibus praeditis) distinguitur.

Suffrutex; caules e basi multi, robusti, erecti ad 1.5m, sub inflorescentiis plerumque simplices, glanduloso-setosi, partibus juvenilibus insuper tenuiter arachnoideis, crebre foliati. *Folia* plerumque 50–80 × 20–28mm, in ramis inflorescentiae minora, lanceolata, acuta vel acuminata, basi lata semiamplectente, utrinque et ad margines glanduloso-setosa, marginibus et linea media interdum insuper tenuiter arachnoidea. *Capitula* heterogama vel raro homogama, 17–20mm longa trans bracteas radiantes duplo latiora, depresso-globosa, plura in paniculam terminalem corymbosam apertam foliatam disposita. *Involucris* bracteae c.9-seriatae, gradatae, imbricatae, flores multo superantes, nitidae, stramineae vel pallide brunneae. *Receptaculum* breviter alveolatum. *Flores* c.600–950; (0–)5–75 feminei, 550–920 hermaphroditi. *Achenia* 0.75–1mm longa, glabra. *Pappi* setae multae, corollam aequantes, apice barbellato, parte media superne barbellata inferne scabrida, basi laevi.

Type: Transvaal, 2330 CC, near Haenertsburg, opposite Magoebaskloof Hotel, grassland and coarse vegetation, many-stemmed clumps, 4–5ft, bracts light yellowish-brown, 13 iii 1981, Hilliard & Burt 14332 (NU holo.; E,K,M,PRES, iso.).

TRANSVAAL. Letaba distr., Duivelskloof, Westfalia estate, c.3600ft, valley of Matata spruit by water's edge of proposed new dam, Rosendal, 15 iv 1959, Scheepers 623 (BM,K,PRES,Z); Woodbush, 5500ft, 30 iii 1894, Schlechter 4744(Z). Pietersburg distr., grassy flats just below highest dome

of Wolkberg proper, 1 iii 1957, *Meeuse* 9862 (M,PRE); Wolkberg, side of forest road, 12 iii 1981, *Hilliard & Burt* 14327 (E,NU). Pilgrim's Rest distr., Mariepskop, 4800ft, 28 iv 1953, *Codd* 7891 (K,PRE); ibidem, 6500ft, i iv 1959, *van der Schijff* 4660 (PRE); 2530 BB, MacMac, edge of gorge downstream from falls, grass slope and in coarse grass round forest patch, 14 iii 1981, *Hilliard & Burt* 14344 (E,NU). Lydenburg, Spitzkop, Goldmine, iv 1887, *Wilms* 702 (BM); 2530 BC, Uitsoek State Forest, c.4500ft, 20 xii 1971, *Howe* 73 (PRE); Sabie Valley, 3800–4500ft, 15 iii 1933, *Galpin* 13767 (PRE); Witklip, 3400ft, i iv 1975, *Kluge* 708 (PRE); ibidem, 20 iv 1975, *Kluge* 723 (PRE); ibidem, 8 iii 1981, *Hilliard & Burt* 14261 (E,NU).

SWAZILAND. Near Forbes Reef, Ngweni Mountain Range, 8 iii 1957, *Meeuse* 10127 (K,M,PRE); 4km N of Forbes Reef, 13 ii 1962, *Ihlenfeld* 2508 (PRE); Mbabane distr., hill NW of Mbabane, c.5000ft, 2 iii 1959, *Compton* 28553 (K,PRE); Malandela, c.4000ft, 6 iii 1964, *Compton* 31984 (PRE); Hlabanyati Valley, 4 iii 1955, *Compton* 24998 (PRE).

The very acute to acuminate leaves are a striking feature of this species and reinforce the capitular differences in distinguishing it from *H. setosum*, in which the leaf tips are obtuse to acute. Its geographical range, across the mountains and high ground of the eastern Transvaal to the mountains of western Swaziland, suggested the specific epithet.

**331. *Helichrysum tysonii* Hilliard, species nova *H. leontonyki* DC. affinis sed habitu congesto (nec laxo), et bracteis involucri acutis (nec longe acuminatis) differt.**

Herba annua tegetem parvam usque ad 20cm diam. formans, caulibus numerosis multiramis prostratis radicanibus, ramulis griseo-tomentosis foliatis. *Folia* 4–10 × 1.5–6mm, anguste vel late spatulata, apicibus rotundatis, summo apice complanato et leviter recurvo, basi lata amplexicauli, marginibus planis, utrinque griseo-lanata. *Capitula* homogama vel heterogama, campanulata, c.4 × 2mm, multa in glomerulos parvos aggregata, foliis arcte circumcincta intimis ad bracteas involucri exteriores contextis. *Involucri* bracteae c.3-seriatae, extimae breves, interiores subaequales flores paulo superantes, apicibus acutissimis leviter recurvis opacis stramineis vel rubentibus. *Receptaculum* fere laeve. *Flores* 19–32; 0–3 feminei, 19–31 hermaphroditi. *Achenia* 0.75 mm longa, pilis duplicibus mucilaginem sub aqua emittentibus. *Pappi* setae numerosae, corollam aequantes, scabridae, basibus ciliis patentibus vix cohaerentibus.

Type: Cape, Graaff Reinet distr., 3124 DD, S extreme of Renosterberg above Lootsberg railway halt, c.1800m, farm Blaauwater, on sandstone rocks and on bare areas along firebreak, 24 xi 1977, *Hilliard & Burt* 10626 (NU holo.; E,K,MO,PRE,S iso.).

CAPE. 3124 DD, Graaff Reinet distr., Cradock-Bethesda Road, Wapadsberg Pass, c.1800m, prostrate in roadside gravel, 24 xi 1977, *Hilliard & Burt* 10618 (E,K,M,NU,S); Middelburg distr., 3124 DC, Compassberg, c.1830m, 29 x 1974, *Acocks* 24580 (PRE); Sneeuwberg, Oppermans Kraal, c.1980m, 28 x 1952, *Acocks* 16514 (PRE); Sneeuwberg, Zuurpoort, 5–6000ft, x 1866, *Biggs* sub *Bolus* 509 (BOL,K); Murraysburg, 'Roodepoort', 1430m, ix 1878, *Tyson* 417 (PRE); 3224A Koudeveldberg SE of

Doornbosch, SE slopes near summit with scattered short shrubs and rocks, occasional prostrate spreading plants forming cushions, disc yellow, 6000ft, 6 xi 1974, *Oliver 5224(K)*. Richmond div., Vlakplaats, on the side of a kopje, x 1914, *Bolus 13789 (BOL)*.

*Helichrysum tysonii* is named in honour of W. Tyson, who collected the first specimens a hundred years ago, but they lay forgotten as '*Leontonyx spathulatus?*'. The sheets collected by Acocks suffered the same fate.

*Helichrysum tysonii* is closely allied to *H. leontonyx*, which is much more open in habit than *H. tysonii* and has long acuminate and markedly squarrose involucre bracts. The bracts of *H. tysonii* resemble those of many specimens of *H. micropoides* but that species is easily distinguished by the spiciform disposition of the heads.

*Helichrysum leontonyx* and *H. micropoides* are partly sympatric in southern Namibia and the western Cape; *H. micropoides* however extends much further east into the semi-arid central and NE Cape, but has not been recorded from the area of *H. tysonii* in the mountains about Murraysburg, Middelburg and Graaff Reinet. *H. tysonii* forms small mats on bare stony ground; we first found it colonizing a gravel road verge.

**332. *Petalacte epaleata* Hilliard & Burt, species nova** *P. coronata* (L.) D. Don affinis sed foliis supra arachnoideis subtus tomentosis marginibus revolutis (non aequaliter tomentosis marginibus planis), capitulis 6-floris (non 8–20-floris), bracteis involucrelibus exterioribus lamina alba carentibus, receptaculo nudo (non paleato) differt.

Suffrutex ramosus, ramis albo-tomentosis foliatis. Folia plerumque 8–15 × 3–4 mm in ramulis florentibus decrescentia et in bracteis remotas prope inflorescentiam transeuntia, anguste panduriformia, apice abrupte acuta, apiculata, basi semi-amplexicaulia, marginibus revolutis, supra tenuiter arachnoidea, subtus albo-tomentosa. Capitula heterogama, c. 5 × 2 mm, multa in paniculas corymbosas compactas ad apices ramulorum disposita. Bracteae involucreales c. 4-seriatae; eae serierum 2 exteriorum redactae, parte inferiore brunneo-lanata, apicali scariosa brunnea, eae serierum interiorum parte inferiore brunneo-lanata, apicali suborbiculari opaca alba. Receptaculum laeve, et paleis et dentibus carentibus. Flores 6, 1 femineus, 5 hermaphroditi ovarii abortivis. Ovaria glabra; achaenia non visa. Pappi setae, contortae, inferne barbellatae, ad apicem breviter plumosae ciliis acutis, basibus breviter connatis.

Type: Cape, 3321 AD, S slopes of Swartbergen near Ladismith, 6 xi 1947, *Esterhuysen 13938 (BOL holo.)*.

The specimen described above was filed in the Bolus herbarium as *Helichrysum* sp. and was thus not examined by Lundgren when he revised *Petalacte*. Apart from the lack of paleae on the receptacle, this species agrees with *P. coronata* very well in all essential features; in particular it has just the same type of pappus, the setae free at the base, barbellate on the shaft and with the barb-cells elongated near the tip to give the condition that Lundgren calls 'subplumose' (see Lundgren *Bot. Notiser* 127:122, Fig. 2 C, E, I, 1974). Other points of agreement are that the inner involucre bracts have a similar narrow shaft suddenly expanded into a round snow-white limb, the stereome is well-marked with a weakly developed thin patch, the

ovaries of the pseudohermaphrodite flowers are aborted, and the achenes glabrous.

There are differences as well: the outer involucre bracts of *P. epaleata* are shorter than the inner and lack an appendage (all the bracts of *P. coronata* are similar), and the head contains only 6, not 8–20, flowers. Vegetatively *P. epaleata* seems to be more slender (and more branched?) with thinner twigs, and the leaves cobwebby above and tomentose below with revolute margins, not densely tomentose on both surfaces with flat margins as in *P. coronata*. It is clear that *P. epaleata* is an ally of *P. coronata* but quite distinct from it, a conclusion reinforced by its occurrence near Ladismith, decidedly east of the range of *P. coronata*, which is only found west of a line drawn from Bredasdorp to Vanrhynsdorp. Thus *Petalacte*, in the strict sense, now has two species and we know that the receptacle may be paleate or epaleate.

**333. *Senecio austromontanus* Hilliard, species nova *S. paludaffini* Hilliard** affinis sed capitulis minoribus distincta: bracteae involucrales c.12 (nec 14–20), 5–6mm longae (nec 6–9mm); flores radiati 5 (nec 8).

Herba perennis ad 50cm alta, caudice lignoso basibus foliorum fibrosis coronato; caules florentes solitarii infra inflorescentia simplices, praeter pilos gossypinos in axillis foliorum et bractearum et interdum in sulcis caulibus praeterque pilos paucos minulos glanduloso-capitados glabri, in parte inferiore foliati. *Folia* pro parte maxima radicalia, 70–120 × 15–25mm, triente petiolari; lamina elliptica, apice obtuso vel subacuto, basi in partem petiolarem valde attenuata, marginibus crebre et minute callosa-denticulatis, glabra, parte petiolari pilis paucis gossypinis vel fere glabra; folia caulina similia sed sessilia, angustiora, remota, in bracteis lanceolato-acutis mox transeuntia. *Capitula* radiata, c.15–30 in panicula corymbosa compacta. *Involucrum* campanulatum; bracteae c.12, 5–6mm longae, glabrae; bracteae calyculi paucae, breves, marginibus minute ciliatis, pilis gossypinis etiam interdum adsentibus. *Flores* radii 5, limbo c.6 × 3mm vivide luteo. *Ovaria* glabra; achenia haud visa.

Type: Cape, Elliot distr., Fetcani Pass, c.2350m, 22 i 1979, in seepage over rock sheets on saddle above cliffs, *Hilliard & Burt* 12348 (NU holo., E iso.).

LESOTHO. Sehlabathebe National Park, c.2350m, 3 i 1979, mountainous grassveld, *Hoener* 2119 (E, NU).

*Senecio austromontanus* is an undistinguished plant, easily passed by. The only two known records, both from c.2350m in damp montane grassland, suggest that the species should be sought further north along the Cape Drakensberg and in the southern Natal Drakensberg.

**334. *Senecio basalticus* Hilliard, species nova *S. napifolio* MacOwan** affinis sed foliis grosse dentatis (nec lyrato-pinnatisectis), bracteis involucralibus brevioribus (c.7mm, nec 9–12mm) et ligulis brevioribus (c.9mm, nec 12–17mm) distinguenda.

Herba perennis, 60cm alta; caulis robustus, fistulosus, basi c.8mm diametro, inferne simplex, superne in inflorescentiam compositam ramosus, pilis albis multicellularibus glandulosis villosis, foliatus. *Folia* radicalia



anthesi emarcida, primum rosulata, spathulata, ad  $8 \times 4$  cm (immatura), marginibus obscure dentatis, crassa, glanduloso-pilosa; caulina ad  $30 \times 7$  cm, sursum decrescentia, spatulata, ad basin petiolarem latam angustata, suprema sessilia, semiamplexicaulia, apice obtusa, marginibus grosse et irregulariter dentatis, utrinque tenuiter glanduloso-pilosa, crassa. *Capitula* radiata, involucri campanulato  $c. 10 \times 7$  mm, multa in pedunculis longis ( $c. 10$ – $25$  mm) glanduloso-pilosis in paniculam cymosam patentem disposita. *Bractee* involucriales  $c. 18$ ,  $c. 7$  mm longae; eae calyculi  $c. 8$ , involucrium aequantes vel superantes, omnes glanduloso-pilosae. *Flores* radii 8–12, feminei, fertiles, limbo brevi ( $c. 9 \times 3$  mm), canarini; flores disci  $5.5$  mm longi, corolla inferne tubulosa superne campanulata 5-lobata flava glabra. *Achenia* non visa; ovaria 2 mm longa, glabra. *Pappi* setae numerosae, corollam aequantes.

Type: Natal, Underberg distr., 5–7 miles NNW Castle View Farm, headwaters of Mlahlangubo river,  $c. 2520$  m, moist grass slope, woolly leaf rosettes only, 27 ix 1980, flowered in cult. ii 1981, Hilliard & Burt 13737 (NU holo).

We found this species in spring (November) when only the woolly leaf rosettes had as yet developed; they grew on a damp earthy bank below basalt cliffs at  $c. 2560$  m. A plant brought back flowered in cultivation in February. *S. basalticus* seems to replace its ally, *S. napifolius*, at higher altitudes (*S. napifolius* has not been recorded above 2100 m).

**335. *Senecio cristimontanus* Hilliard, species nova** *S. gramineo* Harv. affinis sed foliis anguste ellipticis marginibus planis (nec linearibus marginibus valde revolutis), utrinque fere glabris (nec griseo-sericeo-velutinis) facile distinguitur.

Herba perennis, 15–20 cm alta, radicibus anguste fusiformibus, caudice basibus foliorum delapsorum fibroso, caulibus florentibus plerumque simplicibus interdum prope basin furcatis e rosula foliorum solitariis sed rosulis e caudice pluribus. *Folia* pro maxima parte radicalia, ad 15 cm longa plusquam dimidio longitudinis petiolari, basi expansa et vaginante, pilis paucis araneosis in petiolo et paucissimis minutis glandulosis in marginibus exceptis glabra; lamina anguste elliptica, ad 5 mm lata, apice obtuso vel subacuto, marginibus incrassatis minute calloso-denticulatis vel crenulatis; folia caulina similia, sursum mox lanceolato-acuminata, sessilia, in bracteis remotas transeuntia. *Capitula* radiata, solitaria, vel interdum ad 3 in pedunculis longis corymbosa. *Involucrium* campanulatum basi tenuiter lanatum; bractee  $c. 14$ – $16$ ,  $6$ – $7$  mm longae, discum plus minusve aequantes, glabrae, eae calyculi paucae glabrae vel ad margines minute ciliatae. *Flores* radii 7–10, limbo longo et patente, ut ei disci vivide lutei. *Achenia*  $c. 3.5$  mm longa, fusiformia, costata, albo-sericeo-villosa.

Type: Natal, Estcourt distr., Kamberg, 'Gladstone's Nose', summit of ridge opposite camp,  $c. 2100$  m, 9 xii 1968, Wright 767 (NU holo.; E, K iso.).

NATAL. Estcourt distr., Kamberg Nature Reserve, pass up Little Berg near Tsalitsche,  $c. 1980$  m, 25 xii 1971, Hilliard 5238 (E, K, NU, MO, PRE, S). Mpendhle distr., Kamberg area, Storm Heights,  $c. 2100$  m, bare stony slopes, rock crevices, etc., 14 xii 1978, Hilliard & Burt 11700 (E, NU).

See notes under *S. telmateius*. Kamberg means 'crested mountain', its

shape being not unlike that of a cock's comb, and the specific epithet is derived from this.

**336. *Senecio polelensis*** Hilliard, *species nova* *S. brevidentato* M. D. Henderson affinis sed capitulis minoribus (bracteis involucrelibus 4.5–5mm longis, nec 7–8mm), marginibus foliorum obscure serratis (nec regulariter denticulatis nec crenulatis), caudice fibris vix ullis distincta.

Herba perennis, ad 60cm alta, caudice tenui; caules florentes simplices, in inflorescentiam compositam tantum ramosi, tenuiter pilosi, tantum basin versus foliati. *Folia* pro maxima parte radicalia, c.5.5–9.5 × 1–3.5cm, infima late spatulata sursum oblonga deinde lanceolata decrescentia et celeriter in bracteas parvas lanceolato-acutas transeuntia, basi lata semiamplexicauli, apice rotundato vel obtuso, marginibus irregulariter et obscure serratis, utrinque pilis sparsis rudis patentibus induta. *Capitula* radiata, pauca, in panícula parva terminali, pedunculis remote bracteatis parce pilosis. *Involucreum* campanulatum; bracteae c.20, 4.5–5mm longae, glabrae; bracteae calyculi paucae lanceolatae, marginibus parce pilosis. *Flores* radii 8, limbo 5–6mm longo, vivide lutei; flores disci vivide lutei. *Achenia* (juvenilia) 2.5mm longa, pilosa.

Type: Natal, Underberg distr., Cobham Forest Reserve, Upper Polela Cave area, c.2000m, damp grass slopes in stream valley, common but mostly past flowering, 14 ii 1979, *Hilliard & Burt* 12556 (NU hol., E iso.).

NATAL. Underberg distr., Cobham Forest Reserve, junction of Polela with stream past cave, c.2000m, 20 ix 1976, *Hilliard & Burt* 9289 (E,NU); Garden Castle Forest Reserve, upper reaches of Mlahlangubo stream, c.2200m, common on steep rocky slope beside Cave Sandstone outcrops, moist site, rays and disc yellow, scarcely in flower yet after burning, 24 xi 1980, *Hilliard & Burt* 13588 (E).

Although *S. polelensis* is known from only two localities, it will certainly be found elsewhere in these ill-botanized mountains.

**337. *Senecio scoparius*** Harv. in Harv. & Sond., Fl. Cap. 3: 389 (1865).

Types: (Transkei) Kreili's country, *Bowker* 388 (TCD) and without locality, 'grows in the neighbourhood of old kraals', *Barber* 25 (TCD).

Syn.: *S. colensoensis* (O. Hoffm. ex) O. Kuntze in Rev. Gen. Pl. 3 (2): 172 (1898); Hilliard, *Compositae* in Natal 413 (1977) — type: Natal, Colenso, *Kuntze* (NY, n.v., photograph K!).

We immediately recognized the type of *S. scoparius* when going through Harvey's herbarium at Trinity College, Dublin: it is the plant that is currently known as *S. colensoensis*. Harvey had a further specimen of this species (Inyatikas river, Natal, *Gerrard & McKen* 8), which, in *Flora Capensis*, he referred with some doubt to *S. caulopterus* DC., and another, undetermined and unquoted, namely *Gerrard & McKen* 1905, Tugela.

**338. *Senecio telmateius*** Hilliard, *species nova* *S. cristimontano* Hilliard affinis sed ovarii glabris, nec sericeo-villosis, differt.

Herba perennis 15–30mm alta, radicibus tenuibus cylindricis, caudice e basibus foliorum veterum fibroso; caulis florens simplex, solitarius e rosula foliorum sed rosulis pluribus in caudice aggregatis. *Folia* pro maxima

parte radicalia, ad 10cm longa, circa dimidium longitudinis petiolare, basi expansa et vaginante interdum rubra; lamina anguste elliptica plerumque 2–3mm lata, apice obtuso vel subacuto, marginibus incrassatis et dente calloso interdum praeditis, utrinque pilis paucis araneosis; caulina similia sursum mox sessilia, remota, in bracteis lanceolatas acutas transeuntia. *Capitula* radiata, solitaria vel binata in pedunculis longis. *Involucrum* campanulatum; bractee c.12, 6mm longae, disco plus minusve aequales; bractee calyculi paucae ut basis involucri tenuiter araneoso-lanatae. *Flores* radii 8, limbo longo et patente, et radii et disci vivide lutei. *Achenia* fusiformia, costis c.10 pallidis prominentibus, glabra.

Type: Natal, Estcourt distr., 'Game Pass' and 'Highmoor', divide between Mooi and Loteni Rivers, in wet marsh with sedges, 28 x 1973, *Hilliard & Burt* 6961 (NU holo.; E,K iso.).

NATAL. Mpendhle distr., Kamberg area, Storm Heights, c.2100m, stream-side marsh, 16 xii 1978, *Hilliard & Burt* 11789 (E,NU); ibidem, marsh at edge of pool, 15 xii 1978, *Hilliard & Burt* 11757 (E,NU).

LESOTHO. Sehlabathebe National Park, Matša a Mafikeng, c.2450m, seasonally saturated soil, margin of a small pan, mountainous grassveld region, disc and rays yellow, rays mostly 8 per head, ray limbs approximately 7mm, 9 xii 1977, *Hoener* 1904 (E,NU).

This species, as well as *S. cristimontanus* newly described here, were dealt with by Hilliard in *Compositae in Natal* (1977) as *Senecio* sp. no. 70 and 71 respectively. Now that more material has come to hand, it is clear that these two species are indeed distinct: although alike in facies, *S. telmateius*, with glabrous ovaries and thinly hairy leaves, is consistently found in marshy places (whence the epithet), while *S. cristimontanus*, with villous ovaries and very nearly glabrous leaves, is always found in dry stony places.

**339. *Senecio thamathuensis* Hilliard, species nova** *S. oxyodonto* DC affinis sed capitulis majoribus, bracteis involucri c.14–20 (nec 12), floribus radiatis 8–12 (nec 5–7) differt.

Herba perennis ramosus ad c.1m altus; caules glabri vel parce pilosi, foliati. *Folia* plerumque 30–65mm, fere ad costam pinnatim divisa, lobis distantibus utrinque 2–3, c.10–18 x 1–3mm linearibus, apice subacuto, basi semi-amplectente plus minusve auriculata, marginibus distanter et grosse dentatis vel plus minusve integris leviter revolutis, utrinque parcissime pilosa. *Capitula* radiata, plura in paniculas corymbosas laxissimas disposita; pedicelli bracteis paucis parvis distantibus instructi. *Involucrum* campanulatum; bractee 14–20, c.6mm longae, lineis (1)–2–3(–4) resinosis notatae, glabrae; bractee calyculi paucae, parvae, pilis parvis marginalibus. *Flores* radii 8–12, limbo c.6–7mm longo patente, et radii et disci vivide lutei. *Achenia* (juvenilia) c.2.5mm longa, pilosa.

Type: Natal, Underberg distr., Bushman's Nek, Thamathu Cave, c.2300m, bushy herb in damp places among fallen rocks below Cave Sandstone cliffs, S-facing, 5 ii 1976, *Hilliard & Burt* 8971 (NU holo.; E,K,MO,PRES iso., distributed as *S. oxyodontus*).

NATAL. Mpendhle distr., Vergelegen Nature Reserve, c.2100m, bushy herb, under damp Cave Sandstone overhang, collected 2 i 1978, flowered in cultivation xi & xii 1978, *Hilliard & Burt* 11266 (E,NU). Underberg distr.,

Garden Castle Forest Reserve, upper reaches of Mlahlangubo, headwaters of Umzimkulu R., 2300m, in shady moist rock tumble below waterfall, not flowering now, 26 xi 1980, *Hilliard & Burt* 13690 (NU).

Hilliard cited *Hilliard & Burt* 8971 (in *Compositae in Natal* 412, 1977) as *S. oxyodontus*, but it proves to be distinct from *S. oxyodontus*, not only by its larger heads as described in the diagnosis, but by its lack of stipule-like lobes at the base of each leaf: the leaf base is only minutely auriculate. Also, in *S. oxyodontus* there is generally only one median resinous strand in each involucre bract, whereas in *S. thamathuensis* there are mostly two or three. *S. thamathuensis* is not fleshy as *S. oxyodontus*. It was possible to grow a form of *S. oxyodontus* with dissected leaves not unlike those of *S. thamathuensis* side by side with plants of *S. thamathuensis*: the differences in stem and leaf texture and in head size were then strikingly apparent. The species differ too in habit, *S. oxyodontus* having many long whip-like branches from the base, while *S. thamathuensis* is bushy.

Both species favour much the same type of habitat, among rocks with some shade, but *S. thamathuensis* probably requires damper situations than does *S. oxyodontus*, and grows at considerably higher altitudes. In addition to the three collections cited, *S. thamathuensis* has also been seen below cliffs on the upper reaches of the Umzimouti river in Underberg district, north of Thamathu, but the plants were not in flower in November 1977.

#### CRUCIFERAE

**340. *Cardamine flexuosa*** With., Arr. Brit. Pl. ed. 3, 3: 578 (1796); Jones in Tutin et al., Fl. Europ. 1: 289 (1964).

Type: not determined.

NATAL. Pinetown distr., Everton, c.2000ft, weed in garden, damp shady places, flowers white, 11 viii 1971, *Hilliard* 5122 (E,NU).

See comment under *C. trichocarpa* A. Rich.

**341. *Cardamine trichocarpa*** [Hochst. ex] A. Rich., Tent. Fl. Abyss. 1: 18 (1847); Schultes in Bot. Jahrb. 32: 462 (1903); Santapau, Fl. Khandala (Rec. Bot. Surv. India, 16(1)), 9 (1953).

Types: Ethiopia, Chiré, *Petit*; Sana, Dochili, *Schimper*.

Syn.: *C. hirsuta* var. *subumbellata* Hook., Kew Gard. Misc. & Journ. Bot. 4: 294 (1852). Type: Belgaum, *Dalzell* (K holo., E iso.).

*C. subumbellata* (Hook.) Hook. f. & Anders. in Hook. f., Fl. Brit. Ind. 1: 138 (1872).

NATAL. Lions River distr., 2930 AD, Mt Gilboa, c.5000ft, in damp *Leucosidea* wood, 29 xii 1978, *Hilliard & Burt* 11885 (E,K,NU).

This species has not previously been recorded from South Africa. In the field we mistook it for *C. flexuosa* With., another species not yet formally reported for South Africa and recorded above only as a garden weed. *C. trichocarpa* is easily distinguished from *C. flexuosa* by having appressed hairs on the broader fruits.

*Cardamine trichocarpa* is widespread in eastern tropical Africa and is in Zaire, Burundi and Rwanda and perhaps in Cameroun. It was collected in

Angola in 1854–55 by Welwitsch, who noted it as a weed of cultivation; but there seem to be no later records up to the time of *Conspectus Florae Angolensis* (1: 51. 1937), and it has not yet been found in the *Flora Zambesiaca* area. It is known from S India. The species is evidently variable and the Natal specimen matches well with the smaller specimens from East Africa. It also agrees exactly with those from the western side of S India, described as *C. subumbellata*. Schultes regarded this as a synonym of *C. trichocarpa* and Santapau, in his *Khandala Flora* cited above, accepted this synonymy. Dalzell is usually quoted as the authority for *C. hirsuta* var. *subumbellata* and it was certainly published in a paper that appeared under his name. However there is an editorial footnote by Hooker in which he says that Dalzell ranked the plant as a full species in his manuscript, but he (Hooker) considered it could be given no more than varietal rank. I therefore think Hooker must be cited as the authority for the name.

**342. *Heliophila formosa*** Hilliard & Burt, *species nova* *H. rigidiusculae* Sond. affinis sed rosulis foliorum caespitosis e caulibus crassis plus minusve horizontalibus ramosis basibus foliorum persistentibus praeditis (nec caudice efoliato) orientibus et caulibus floriferis dependentibus vel effusis (nec erectis) distinguitur.

Herba perennis; caules basi plus minusve horizontales, ramosi, usque ad 10mm diametro, basibus foliorum persistentibus asperi, rosulas foliorum emittentes. *Folia* radicalia rosulata, c.7–15cm × 10–11mm, oblanceolata, acuta, simplicia, crassiuscula, glabra. *Caules* floriferi c.30–85cm longi, effusi, foliati; folia caulina radicalibus similia, usque ad 10cm × 8mm, sursum gradatim minora, minute stipulata. *Racemi* simplices, terminales, sub fructibus elongati. *Pedicelli* anthesi 1.8–2.5cm longi, sub fructibus ad 4cm et curvati. *Sepala* 6–7 × 2mm, duo exteriora cucullata apicibus incrassatis, duo interiora basibus leniter saccata. *Petala* 11 × 9mm, obovata, laete vel saturate violacea, ungui brevi appendice obliqua papillata uno latere praedito. *Filamenta* brevia 2, 4mm longa, appendice basali magna ovata papillata; longiora 4, 5mm longa, inappendiculata, ad basin papillata. *Antherae* 3.5mm longa. *Ovarium* 5.5mm longum, anguste oblongum, ovulis in quoque loculo 9; nectaria 2, bipartita, partibus plus minusve globosis. *Stylus* anthesi 2.5mm longus. *Stigma* capitatum. *Fructus* c.4–6cm longus, stylo persistente 6–10mm longo excluso, 4.5mm latus, levissime moniliformis.

Type: Natal, Estcourt distr., ridge SE from Giant's Castle, c.8200ft, on cliffs deep violet flowers, pods pendulous, 26 xii 1968, *Hilliard & Burt* 5688 (E holo.; NU iso.).

NATAL. 2929CB, Underberg distr., Garden Castle Forest Reserve, stream valley beyond forester's house, c.6400ft, rocky bank at edge of scrub above stream, 11 xi 1980, *Hilliard & Burt* 13443 (E, NU); Cobham Forest Reserve, Upper Polela Cave area, c.6800ft, against rocks above stream, 15 ii 1979, *Hilliard & Burt* 12585 (E, NU); 5–7 miles NNW of Castle View Farm, headwaters of Mlahlangubo River, on rock ledge in stream gully on basalt, c.7800ft, 24 xi 1980, *Hilliard & Burt* 13594 (E, NU). Estcourt distr., Giant's Castle G.R., Upper Injasuti, 11000ft, among large boulders on summit of plateau, 28 i 1966, *Trauseld* 553 (NU).

*Heliophila formosa* favours low damp cliffs, often partially shaded, and overhanging stream gullies. The plants form large leafy clumps with the flowering stems drooping gracefully downwards and then turning upwards at the tips to carry the handsome violet flowers more or less erect. The flowers have a sweet smell similar to that of *Nerium oleander*.

This species is easily confused with broad-leaved specimens of *H. rigidiuscula* Sond., particularly if the basal parts, or notes on habit, are wanting. *H. rigidiuscula* can be found growing in grassland near the cliffs or rocky banks that carry *H. formosa*. The flowering stems are often solitary, always erect, and lack radical leaves, and thus contrast strongly with the big leafy clumps of *H. formosa* with its masses of trailing flowering stems.

#### GENTIANACEAE

**343. *Sebaea minutissima*** Hilliard & Burt, *species nova* fortasse *S. pusillae* Cham. affinis sed filamentis in corollae sinibus insertis (nec distincte infra sinibus), antheris glandula apicali tantum instructis (nec glandula apicali et duabus basalibus), et stylo tumore stigmatoso praedito differt.

Herba annua perparva, 10–35mm alta, caulibus simplicibus vel ramosis foliatis. *Folia* 2.5–7 × 2.5–5mm, rhomboidea, late elliptica vel subrotundata, in basin petiolarem angustata. *Inflorescentia* e cymis 1–3-floris terminalibus, bracteis foliaceis. *Calycis* segmenta 5, c.3.5–4 × 1.5–2mm, per 1.5mm coalita, acuta apice paulo recurvo, carinata sed non alata. *Corolla* flava; tubus 3–4mm longus, haud vel vix calycem excedens; lobi 5, 2.5–3 × 1.5mm, elliptici, obtusi vel acuti. *Filamenta* 0.25–0.5mm longa, in corollae sinibus inserta; antherae 0.5–0.75mm longae, glandula apicali una globosa breviter stipitata instructae. *Stylus*, stigmati capitato incluso, c.1–2.5mm longus, tumore stigmatoso in vel infra medio praeditus. *Capsula* 3 × 1.5mm, ambitu elliptica; semina c.0.25mm longa.

Type. Natal: Underberg distr., Cobham Nature Reserve, Upper Polela Cave area, c.2350m, on damp bank with mosses etc., 21 xi 1976, *Hilliard & Burt* 9304 (NU holo., E iso.).

NATAL. Bergville distr., Drakensberg, Injasuti area, near trickle on sloping rock, N aspect, 8000ft, vii 1952, *Esterhuysen* 20277 (BOL); ibidem, 6500–7000ft, on damp marshy earth faces on side of kloof, growing between grass tufts, corolla yellow, vii 1956, *Esterhuysen* 26057 (BOL, PRE); Cathedral Peak, c.8000ft, on small cliffs, S aspect, vii 1974, *Esterhuysen* s.n. (BOL); ibidem, Mnweni area, on moist banks (or seasonally moist) and faces in Mponjwani Gully near the stream, 7000ft, vii 1972, *Esterhuysen* 32981 (BOL); ibidem, damp ledges above stream, 6000ft, vii 1953, *Esterhuysen* 21670 (BOL); ibidem, Ndedema area, in shelter of overhanging rock, 8000ft, vii 1950, *Esterhuysen* 17349 (BOL); ibidem, along banks of tributary of Ntonjelane river at base of The Bell, on moist vertical spots, 6500–7000ft, vii 1974, *Esterhuysen* 33582 (BOL). Underberg distr., Cobham Nature Reserve, Upper Polela Cave area, crevices on basalt cliffs and wet earth at edge of basalt gravel patches, deep yellow flowers, 13 ii 1979, *Hilliard & Burt* 12516 (E,NU).

This is undoubtedly the new species mentioned by Marais & Verdoorn at the end of their account of *Sebaea* (in *Flora of Southern Africa*, 26: 211, 1963), but the specimen they quote, Killick 1917 from the Cathedral Peak area of the Drakensberg, could not be found in PRE in March 1980. However, Miss E. Esterhuysen has collected the plant several times in the same general area, and in addition to our own collections at Upper Polela, we have seen it in fruit on a damp shady ledge on the north-facing cliffs near the summit of Sani Pass.

#### IRIDACEAE

##### 344. *Hesperantha huttonii* (Bak.) Hilliard & Burt, **comb. nov.**

Type: E Cape, Stutterheim div., Katberg, *Hutton* (K).

Syn.: *Acidanthera huttonii* Baker in Journ. Bot. 14: 339 (1876), & in Journ. Linn. Soc. Bot. 16: 160 (1877), & Handb. Irid. 187 (1892) & in Fl. Cap. 6: 133 (1896).

[*Hesperantha longituba* auctt., non (Klatt) Bak.; G. Lewis in Journ. S. Afr. Bot. 7: 30 (1941); R. C. Foster in Contr. Gray Herb. 166: 19 (1948) p.p.]

E CAPE. Stutterheim div., Katberg, forest on rocks (moist), 2500–3000ft, March, *Baur* (K); ibidem, near Black Bridge, on side of road in mud, fl. pink, i 1930, *Dyer* 2319 (K); ibidem, common in damp shaded locality in rock crevices, fls pink, 6 ii 1945, *Adams* 155 (E,NU).

*H. longituba* (Klatt) Baker, with which *H. huttonii* has been confused, is a sturdier erect plant that flowers in early spring, in contrast to the mid-summer, or even late summer, flowering of *H. huttonii*.

##### 345. *Hesperantha hygrophila* Hilliard & Burt, **species nova** palustris *H. rupestri* R. Foster affinis, sed floribus albis vel ochroleucis (tepals exterioribus externe haud rufis) recedit.

Cormus turbinatus, c.12×8mm, tunicis exterioribus fusco-brunneis, apicibus in cuspides basibus in segmenta truncata fissis. *Folia* 3, cataphyllo brevi basali vaginante adjecto; infimum 8–45cm×2–4mm, lineare, acutum, rectum, firmum, alia similia sed minora. *Caulis* 15–60cm altus, erectus. *Flores* interdum solitarii, plerumque 2–14 in spicam laxam vel plus minusve congestam dispositi. *Bractaeae* exteriores 10–15mm longae, virides, interdum roseo-apiculatae, interiores similes sed minores. *Perianthium* tubo recto 4–7mm longo; tepala exteriora 10–12×4–5mm, elliptica, subacuta, interiora paulo minora, omnia alba vel post anthesin rubescentia. *Filamenta* 2–3mm longa; antherae 5–7mm longae. *Stylus* perianthii tubo aequalis, ramis c.8mm longis. *Capsula* immatura 5×5mm, matura haud visa.

Type: Natal, Alfred distr., Mt Ngeli, c.5000ft, wet grassy rocks, often in crevices, flowers white, 2 i 1969, *Hilliard & Burt* 5762 (E holo.; NU iso.). NATAL. Estcourt distr., Highmoor F. R., occasional in vlei on Little Berg, 6500ft, erect, ±2', fls. white, 14 i 1966, *Killick & Vahrmeijer* 3582 (K). Lion's River distr., Soutar's Hill on main Nottingham Road–Underberg road, in drier parts of marsh, snow white flowers, 26 xii 1973, *Hilliard* 5385 (E,K,NU). Underberg distr., Garden Castle Forest Reserve, hill south of



Drakensberg Garden Hotel, in vlei, at present under 6 inches of water, c.6200ft, flowers white, 30 i 1975, *Hilliard & Burtt* 7873 (E,NU); Coleford, south of Nature Reserve above Endawana river, c.5000ft, wet grassland, white flowers, occasionally flushed pink, 25 xii 1976, *Hilliard & Burtt* 9565 (E,NU); Cobham, 1 mile on road to Drakensberg Garden, c.5500ft, in marsh, creamy white flowers, 28 xi 1976, *Hilliard & Burtt* 9418 (E,NU). Polela distr., Mawahqua, 'Sunset', upper plateau, growing on water seepage rocks, 6500ft, flowers white, tinted pink and changing to red as they wither, 8 i 1978, *Rennie* 886 (E,NU).

LESOTHO. Sehlabathebe National Park, on the Natal-Lesotho border, east of Matša a Mafikeng, marshy ground, pond margin, c.2425m, flowers white, 18 i 1977, *Hoener* 1774 (E,NU); ibidem, 2300-2500m, common in spongy area near stream, 4-14 i 1973, *Guillarmod, Getliffe & Mzamane* 5 (K); ibidem, about 2km from the entrance to the Lodge in a very marshy area, 2350m, locally abundant, flowers white, 20 i 1976, *Beverly* 376 (E,NU).

TRANSVAAL. 2430 DD, Pilgrim's Rest distr., Graskop, 2km from town on road to Blyde River Canyon, marshy grassland with *Stiburus* dominant, flowers white, becoming speckled with pink, especially at base and tips, after closing; only one open flower on each inflorescence, 14 iii 1981, *Hilliard & Burtt* 14334 (E,MO,NU).

This species is not easy to characterize, but it is easy to recognize in the field because it always grows in wet places, usually in grassy marshes, more rarely on wet grassy rocks. It flowers between December and March. Amongst the species with a straight perianth tube, the only other in the summer rainfall area with white or creamy white flowers (apart from white sports) is *H. lactea* Bak. This is not unlike *H. hygrophila* in facies but has leaves 4-7mm wide and favours ordinary grassy hillsides.

**346. *Hesperantha vernalis* Hilliard & Burtt, species nova *H. longitubae* (Klatt) Baker** affinis sed planta humiliore, floribus paucis, perianthii tubo bracteis vix superante distinguitur.

Cormus turbinatus c.10×8mm; tunicae exteriores fusco-brunneae, interiores pallidiores, apicibus in cuspides basibus in segmenta truncata fissis. *Folia* plerumque 3, folio uno emarcido (fortasse in automno praecedenti producto) pro cataphyllo persistente; folium exterius (lamina libera) c.3-7cm longum et 4-7(-12)mm latum (ad c.15cm post anthesin elongatum), oblongo-falcatum, obtusum, firmum, prominenter nervosum, marginibus incrassatis, viride interdum ad apicem vel basin versus purpurascens; folium intimum redactum, caulem vaginans, saepe acutum. *Caules* c.7-15cm, tenues, erecti, stricti vel curvati. *Flores* solitarii vel 2-3 in spicam laxam dispositi. *Bractae* exteriores 1.5-1.8cm longae, lanceolatae vel oblongo-lanceolatae, acutae vel obtusae, virides purpureo-suffusae; interiores similes sed minores. *Perianthii* tubus c.5-10mm longus, haud vel vix bracteis superans, tenuis, sub tepalis leviter dilatatus; tepala exteriora 15-18×6-7mm, interiora 13-14×6-7mm, omnia elliptica, obtusa, pallide rosea, dimidio inferiore albida vel viridiuscula, exteriora rubro-venosa. *Filamenta* c.2mm longa; antherae 6-8mm longae. *Ovarium* 4-7×2.5-3mm; stylus perianthii tubum fere aequans, ramis c.11mm longis. *Capsula* haud visa.

Type: Natal, Escourt distr., south side of Kamberg, a few feet from the summit in unburnt grass and on perpendicular rock faces, c.6950ft, 9 ix 1973, *Wright* 1530 (E hol.; MO, NU iso.).

NATAL. Without locality, *Fannin* 57 (TCD). Estcourt distr., south side of Kamberg, c.6800ft, 11 ix 1974, *Wright* 1822 (E,NU). Polela distr., Mawahqua Mt, Sunset Farm, Mvulshwane, 6000–6500ft, fls delicate pale mauve, 1 ix 1974, *Rennie* 589 (NU); ibidem, Sunset Farm, 5500ft, SW-facing steep slope, deep turf on overhangs, 2 ix 1976, *Rennie* 751 (NU). Underberg distr., Bamboo Mt, viii 1973, *Grice* s.n. (NU); Garden Castle N.R., 'Three Pools' area, 6000–7000ft, SW-facing sites, mostly in cracks of Molteno sandstone cliffs and overhangs, 10 viii 1980, *Fey* s.n. (NU).

E CAPE. Elliot distr., Fetcani Pass, c.7700ft, in grass tussock below basalt cliff, fls very pale lilac three outer tepals marked light greenish brown, 15 x 1980, *Hilliard & Burt* 13137 (E).

ORANGE FREE STATE. Harrismith distr., near Swinburne, early spring, *Jacobsz* s.n. (E).

LESOTHO. Sehlabathebe National Park, c.2400m, mountainous grass-sedgeveld, 12 iv 1977, *Hoener* 1839 (E); ibidem, c.1400m, 27 ix 1978, *Hoener* 2068 (E,NU); ibidem, c.2425m, 15 ix 1978, *Hoener* 2059 (E,NU). Blue Mountain Pass, 8800ft, 1 x 1969, *Williamson* 37 (K).

The specimen collected by *Fannin* (TCD) had been given a name by Harvey in his herbarium, but he did not live to publish it. The species has had to wait over 100 years to be named. It is widely distributed in the eastern mountain region, flowering early in spring.

#### JUNCACEAE

**347. *Juncus tenuis* Willd., Sp. Pl. 2: 214 (1799);** Buchenau, Pflanzenr. (Heft 25) Juncaceae 115 (1906); Snogerup in Tutin et al., Fl. Europ. 5: 106 (1980).

Type: N America (B-Willd., IDC sheet 6888).

NATAL. Underberg distr., Sani Pass, 2000–2400m, 17 xii 1958, *Werdermann & Oberdieck* 1448 (K); ibidem, 6500ft, locally common in pool at roadside, erect culms 6–12in, 29 i 1966, *Killick & Vahrmeijer* 3791 (K,PRE); ibidem, 2280m, lower end of old road, muddy streamside, 17 ii 1982, *Hilliard & Burt* 15549 (E,NU); Cousins Liebenberg farm dam, ±40km from Underberg on Bushman's Nek road, emergent in water up to 30cm deep, 17 iii 1976, *Musil* 267 (K); Garden Castle Forest Reserve, stream valley beyond forester's house, c.6400ft, forming very dense mats in well-trodden path in valley bottom, 11 xi 1980, *Hilliard & Burt* 13439 (E,NU).

The first determinations of S African material of this unwelcome immigrant from N America were made by Mrs A. A. Mauve (Pretoria), but the records have not yet been published. Elsewhere *Juncus tenuis* has proved a rampant invader and it is now widespread in western Europe and is also reported from Australia.

We found this plant on a well-trodden single-file track in a damp valley bottom, and there it formed a pure community but scarcely encroached into the taller grass on either side. The aerial parts are tufted, but the roots of

close-growing plants form dense interlocking masses near the surface. Trodden path-ways are a habitat particularly favoured by this species (see Richards in *Journ. Ecol.* 31: 51–59 (1943) under the synonym *J. macer* S. F. Gray). The seeds have a mucilaginous coat which can adhere to a passing animal and this probably facilitates distribution along tracks.

## LILIACEAE

**348. *Albuca fastigiata*** Dryand. var. ***floribunda*** Baker in Thiselton-Dyer, Fl. Cap. 6: 458 (1897).

Type: E Cape, Somerset East div., Bosch Berg, 3000ft, *MacOwan* 1832 (K). E CAPE. Stockenström div., Katberg Pass, c.5800ft, leaves channelled and curved, more or less pendent, inner tepals lightly tipped yellow, all anthers fertile, 26 i 1979, *Hilliard & Burtt* 12402 (E,NU).

NATAL. Underberg distr., Cobham Forest Reserve, Upper Polela cave area, c.6800ft, sandstone cliffs, leaves long pendulous with silver band down middle, all tepals white with green band on back, inner stamens with smaller but fertile anthers, 14 ii 1979, *Hilliard & Burtt* 12569 (E,NU).

This plant characteristically grows in cracks or on ledges of sandstone cliffs, the leaves being pendulous and the capsule remarkably large,  $2.5 \times 1.5$  cm. A rather similar erect plant found on rock outcrops (Natal, Underberg distr., Cobham Forest Reserve, Sipongweni, 6500ft, 22 ii 1981, *Hilliard & Burtt* 14093) had fully ripe capsules that were only  $1.4 \times 1$  cm. The relationship of these two plants requires further field study, and that of var. *floribunda* to the true *A. fastigiata* also needs further investigation.

**349. *Albuca shawii*** Baker in Journ. Bot. 12: 367 (1874), & in Thiselton-Dyer, Fl. Cap. 6: 462 (1897).

Lectotype: Cape, Colesberg, *Shaw* (K).

Syn.: *A. trichophylla* Baker in Gard. Chron. ser. 3, 6: 94 (1889), & in Thiselton-Dyer, Fl. Cap. 6: 455 (1897); Gledhill, E Cape Veld Flow. 68 (1969). Type: cult. in Bot. Gard. Cambridge from Natal, coll. *Adlam* (K).

*A. elliotii* Baker in Journ. Bot. 29: 71 (1891). Type: Transvaal, crevices of sandstone rocks near Lake Chrissie, *Elliot* 1597 (K).

*A. minima* Baker in Thiselton-Dyer, Fl. Cap. 6: 455 (1897). Type: Orange Free State, Qua Qua Mt, Witzieshoek, 7000ft, on stony grassy summit, *Thode* 61 (n.v.).

Distribution: Ranges from near Grahamstown in the south and Prieska in the west across to the Magaliesberg near Pretoria and Ermelo in SE Transvaal.

Selected specimens:

E CAPE. Bedford div., road from Grahamstown, i 1930, *Dyer* 2327 (K). Queenstown div., near Bailey, Weltevreden valley, 4350ft, 28 i 1890, *Galpin* 2632 (K). Peddie distr., Ripplemead Estates NE of Breakfast Vlei, dry ground in open river-valley scrub, 12 xii 1977, *Hilliard & Burtt* 11009 (E, NU). Barkly East distr., Rhodes to Naude's Nek, 7800ft, bare soil around rock sheets, 22 ii 1971, *Hilliard & Burtt* 6676 (E,NU).

N CAPE. Prieska distr., hillsides round Prieska, *Bryant* 581 (K). Griqualand West, Herbert, St Clair, *Orpen* 209 (K).

ORANGE FREE STATE. Bloemfontein distr., Krugersdrift N.R., 4500ft, 27 xii 1973, *Muller* 1316 (K). Harrismith distr., Qwa Qwa Mt above 'Bluegumbosch', 6600ft, in pockets and tufts of vegetation on sandstone cliffs, 8 i 1979, *Hilliard & Burtt* 12000 (E,NU); Kerkenberg, in seams of large block of fallen sandstone, 4 i 1979, *Hilliard & Burtt* 11934 (E,U); Platberg, near Gibson's dam, crevices of rock sheets, 30 xii 1975, *Hilliard & Burtt* 8707 (E,NU).

NATAL. Bergville distr., Oliviershoek Pass, edges round sandstone platforms, c.6500ft, 18 ii 1970, *Hilliard* 4922 (E,NU) and cult. RBG Edinb. C 8287 (E).

TRANSVAAL. Magaliesberg, Hornsnek, 12 miles W of Pretoria, 1500m, 6 i 1956, *Schlieben* 7743 (K). Heidelberg, 5000ft, quartzite rocks on kopje, 11 xii 1946, *Codd* 2317 (K).

Baker placed *A. shawii* in a distinct subgenus of *Albuca*, subgen. *Leptostyla*, on the grounds that the style was cylindrical, not prismatic (triquetrous) as in subgen. *Albuca* and subgen. *Falconera*. N. E. Brown pointed out long ago, in annotations in the Kew herbarium, that this was due to an error of observation, the style of *A. shawii* being in no way distinctive. It then became clear that *A. trichophylla* could not be maintained as an independent species and N. E. Brown placed *A. trichophylla* and *A. elliotii* (which Baker himself had already reduced to *A. trichophylla*) as synonyms of *A. shawii*.

We now add *A. minima* to this synonymy. The type specimen was presumably destroyed at Berlin, but the description strongly suggests that it was no more than a small plant of *A. shawii*. We have found just such plants in the Barkly East distr. at Naude's Nek (*Hilliard & Burtt* 6676): on Qwa Qwa mountain, the type locality, most of the plants seen (*Hilliard & Burtt* 12000) were decidedly larger and in cultivation they are indistinguishable from *A. shawii*. The bright yellow nodding flowers and dark green filiform glandular leaves make this an easily recognized species.

**350. *Bulbine filifolia*** Baker in Journ. Linn. Soc. Bot. 15: 344 (1876) & in Fl. Cap. 6: 361 (1897).

Type: Cape, Graaff Reinet div., summit of Tandjies Berg, 1370m, *Bolus* 762 (K).

Syn.: *B. trichophylla* Baker in Bull. Herb. Boiss. sér. 2, 1: 780 (1901). Type: Transvaal, Henops river, *Rehmann* (Z).

CAPE. Aliwal North distr., Elands Hoek, 4550ft, x 1903, *F. Bolus* 6853 (K).

NATAL. Underberg distr., Coleford Nature Reserve, 'Sunnyside', c.1500m, crevices of sandstone cliffs, 25 xii 1976, *Hilliard & Burtt* 9543 (E,NU).

Polela distr., Mawahqua Mt, 'Sunset', c.1800m, on sandstone at top of N facing krantzes, 12 i 1973, *Rennie* 498 (E,NU).

ORANGE FREE STATE. Senekal, 11½ miles NE by N of Marquard turning, Verongeluk Spruit, c.4900ft, 13 xi 1969, *Acocks* 20813 (K).

TRANSVAAL. Johannesburg, Jeppes Town ridge, 6000ft, x 1898, *Gilfillan* 6080 (K). Belfast distr., Dullstroom, *F. v. d. Merwe* 1102 (K). Sabie to Lydenburg, xi 1915, *Rogers* 18611 (K). Pilgrims Rest distr., Mariepskop, 10 xii 1963, *v. d. Schijff* 6335 (K).

LESOTHO. Quthing distr., Seapala, 6000ft, cult. in RBG Kew from Williamson 764 (K).

The outer tepals are brownish, the inner ones pale yellow with thick brown midrib. The type of *B. trichophylla* was kindly sent on loan from Zurich; there seems to be no way of distinguishing it from *B. filifolia*, to which Baker himself said it was closely allied, without giving any diagnostic differences. This species is now recorded for Natal for the first time.

**351. *Eriospermum ornithogaloides*** Baker in Journ. Linn. Soc. Bot. 15: 266 (1876) & in Thiselton-Dyer, Fl. Cap. 6: 377 (1896).

Type: Natal, Pinetown, Field's Hill, 1500ft, Sanderson 905 (K).

Syn.: *E. microphyllum* Baker in Thiselton-Dyer, Fl. Cap. 6: 372 (1896).

Type: Natal, Weenen County, South Downs, 5000–6000ft, Wood 4394 (K).

NATAL. Bergville distr., Cathedral Peak Forestry Reserve, Ndedema river valley, 25 x 1973, Hilliard & Burtt 6917 (E,NU). 2929 CB, Underberg distr., 5–7 miles NNW of Castle View Farm, headwaters of Mlahlangubo River, 6800ft, edges of Cave Sandstone rock sheets, 25 xi 1980, Hilliard & Burtt 13659 (E,NU). 2929 BC, Mpendhle distr., Kamberg area, 'Storm Heights', c.7000ft, shallow soil over rock sheets, 16 xii 1978, Hilliard & Burtt 11786 (E,NU). Estcourt distr., Bushman's River Valley, 6–8000ft, 18 x 1908, Wylie comm. Wood 10664 (E). Pinetown distr., Kloof Nature Reserve, c.600m, x 1974, Gibson s.n. (NU).

ORANGE FREE STATE. Harrismith distr., Platberg, near Gibson Dam, dry stony ground, 30 xii 1975, Hilliard & Burtt 8710 (E,NU); ibidem, summit grassland above One Man Pass, c.7200ft, stony ground, 13 xii 1976, Hilliard & Burtt 9494 (E,NU).

TRANSKEI. Mt Ayliff distr., Mt Insizwa, rocky grass slopes, 17 xi 1973, Hilliard & Burtt 7291 (E,NU).

A comparison of the types of *E. ornithogaloides* and *E. microphyllum* shows them to be conspecific: Baker saw no leaf when he described *E. ornithogaloides* and his specimen was in much younger flower than that of *E. microphyllum*. The species is a distinctive one, with its irregular tuber, single prostrate cordate hysteranthous leaf, and white perianth with a greenish-blue keel (drying brown or blackish) the blue colour sometimes suffusing the whole perianth. It is relatively widely distributed in Natal between c.600 and 2100m above sea level, on sandstone rocks. We are familiar with it in the Drakensberg, where it is common around the edges of rock sheets; its range extends to the north eastern corner of the Orange Free State, on the mountains near Harrismith, and south to Insizwa Mountain in the Transkei.

**352. *Scilla dracomontana*** Hilliard & Burtt, species nova *S. natalensi* Planch. et *S. kraussii* Baker affinis sed statura minore, foliis acutis solo appressis tempore floreendi maturis (nec acuminatis erectis tempore floreendi juvenilibus).

Bulbus plus minusve globosus, c.3×3cm, squamis exsiccatis membranaceis, plerumque apicibus fusco-brunneis truncatis plicatis modo supra terram eminentibus. Folia c.5, synanthia, plerumque solo appressa; lamina

3–8 × 1–3.5cm, ovata, acuta, supra tenuiter vel dense pubescens, infra minus dense pubescens, uniformiter perviridis. *Pedunculus* terminalis, simplex, pubescens, 6–11cm altus, racemo densiusculo dimidio longitudinis incluso. *Bractee* lineari-lanceolatae, c.3–9 × 0.5–1mm, membranaceae, glabrae, virides et violaceae; bracteola basi pedicelli lateraliter posita dimidio minus. *Pedicelli* c.8–18mm, longissimi fructiferi, filiformes, sparsissime pubescentes. *Tepala* c.5 × 2mm, lanceolata, patentia, intense caerulea, rarissime alba. *Filamenta* 2mm longa applanata, alba, ad basin expansa et in anulum cohaerentia. *Antherae* 1mm longae, versatiles. *Ovarium* 2 × 2mm, plus minusve globosum, trilobum, album; ovula in loculo quoque plerumque 4; stylus 1.5mm; stigma truncatum. *Capsula* (immatura) globosa, 7 × 7mm.

Type: Natal, Estcourt distr., 'Game Pass', 28 x 1973, *Hilliard & Burt* 6960 (E holo., NU iso.).

NATAL. Estcourt distr., Giant's Castle G. R., 6000ft, 25 ix 1957, *Edwards* 2165 (NU); ibidem, 6100ft, 15 ix 1965, *Trauseld* 407 (NU). Lion's River distr., Mgeni Poort, 5500ft, 7 ix 1965, *Moll* 1934a (NU); ibidem, 10 ix 1964, *Moll* 987 (NU); Inhluzane, 6000ft, 15 x 1964, grass mat, wet lithosere, *Moll* 1289 (NU). Underberg distr., Sani Pass, fairly common in rock crevices, xi 1964, *Gillies* 115 (NU); Bamboo Mt, ix 1973, *Grice* s.n. (NU); Upper Umzimouti valley, 6500–6700ft, 27 xi 1976, *Hilliard & Burt* 9397 (E,NU); Cobham Forest Station, Ndlovini, Troutbeck, sandstone cliffs in tussocks (bulbs buried) or cracks (bulbs sometimes exserted), 8 xi 1980, *Hilliard & Burt* 13339 (E,NU).

This is the plant that was illustrated by Trauseld (*Wild Fl. Natal Drakensberg* 21, 1969) as *S. kraussii* Baker, and two of the sheets cited above were so determined in the herbarium by Jessop. However, when he came to revise the South African species of *Scilla*, Jessop reduced *S. kraussii* to *S. natalensis* Planch. (see *Journ. S. Afr. Bot.* 36: 241, 1970). Whether true *S. kraussii* (cf. *Fl. Pl. S. Afr.* 21: tab. 822, 1941, which seems a fair match of Baker's type at Kew), grades continuously into *S. natalensis* Planch. (cf. *Fl. Pl. S. Afr.* 10: tab. 365, 1930) is a difficult problem that needs much more field study. However, *S. kraussii* sensu stricto does not appear to grow in the Drakensberg. There, where *S. natalensis* is sympatric with *S. dracomontana*, *S. natalensis* always has very large bulbs and tall inflorescences, in contrast to the dwarf *S. dracomontanus*. The latter is distinguished from both *S. natalensis* and *S. kraussii* by having the leaves fully developed and flat on the ground at flowering time, the other two species have them erect and they are still in the young stage when the flowers open.

*S. dracomontana* has so far been recorded only from Natal, along the Drakensberg and its foothills from Giant's Castle (Estcourt distr.) to the upper Umzimouti Valley (Underberg distr.), between c.1675 and 2100m above sea level. It grows on sandstone cliffs, in rock crevices and on hard-packed earth, often forming extensive colonies.

**353. *Trachyandra smalliana* Hilliard & Burt, species nova nulli arcte affinis.**

Herba perennis, acaulescens, radicibus fibrosis, rhizomatibus brevissimis

erectis pluribus caespitosis. *Folia* pauca monomorpha, basibus tubularibus vaginam reticulatim fibrosam persistentem c.10–15 × 1cm formantibus; lamina semiteres uno latere canaliculata, c.50–60cm longa et 2mm lata, fusco-viridia, glabra. *Pedunculi* axillares, simplices, glabri, c.60–70cm longi, plures e quoque rhizomate. *Bractae* solitariae, ovatae, apiculatae, c.2.5mm longae, membranaceae, albae media linea rubro-brunnea notatae. *Pedicelli* solitarii, non articulati, c.8–10mm longi, sub fructibus stricti et erecti. *Tepala* c.6 × 2mm, alba, carina mediana conspicua rubro-brunnea notata, post anthesin apicibus inter se cohaerentibus admodum supra basin abscissa, vestigium parvum cupulare sub capsula relinquentia. *Stamina* 6; filamenta ad bases tepalorum adnata, laevia, alba, tria 3.5mm tria 2.75mm longa; antherae 1mm longae, versatiles, fulvae. *Ovarium* globosum, trilobum, 1 × 1mm, viride, ovulis in quoque loculo duobus; stylus filiformis, 3mm longus, stigmatibus truncato. *Capsula* globosa, loculicide 3-valva, c.3mm longa, nigrescens, transverse rugosa. *Semina* in quoque loculo solitaria, 3mm longa, facie interiore longitudinaliter costata, dorso rotundata, nigra, maculis flavis notata, leniter verrucosa.

Type: Natal, 2929 CB, Underberg distr., Garden Castle Forest Reserve, valley beyond forester's house, c.6400ft, forming clumps in open scrub in valley bottom and on slopes, 11 xi 1980, *Hilliard & Burt* 13414 (E holo.; NU, PRE iso.).

NATAL. 2929 CB, Underberg distr., Cobham Forest Reserve, Sipongweni, c.7000ft, wet ground around spring, 20 ii 1981 (fruiting), *Hilliard & Burt* 13944 (E, NU).

The correct placement of *Trachyandra smalliana* has raised problems. The long cylinders of reticulate leaf-base fibres tightly sheathing the young leaves and bases of the peduncles are similar to those in many species of *Bulbinella*, but the perianth is deciduous, not persistent as in *Bulbinella*, and when it falls it leaves a shallow cup or rim below the capsule, as in *Trachyandra*. Furthermore, each tepal has a conspicuous dark keel, another feature of *Trachyandra* but not of *Bulbinella*. To have placed this plant in *Bulbinella* would have introduced a discordant element there. However its inclusion in *Trachyandra* is not altogether harmonious, because the filaments throughout *Trachyandra* are scabrid, whereas in the new species they are smooth. At first sight the seeds, too, seem to differ from those of *Trachyandra*, which are described as 'usually brown or grey with immersed yellow glands when immature, becoming glutinous when ripe...' (Obermeyer in *Bothalia* 7:712, 1962). The ripe seeds of *T. smalliana* are black with elongate yellow flecks and slightly verrucose. We have only a few fruiting specimens of *Trachyandra* available to us, but these showed that the seeds of *T. saltii* (Bak.) Oberm. var. *saltii* (Wood 6167, Durban, at E) are black with yellowish or greyish flecks and closely resemble those of *T. smalliana*, as do those of *T. reflexipilosa* (Kuntze) Oberm. (Wilms 1807, Lydenburg, at E) and *T. asperata* Kunth var. *basutoensis* (Poelln.) Oberm. (Hilliard & Burt 12480, Underberg distr., Cobham F. R. at E). However, in *T. saltii* var. *secunda* (Krause & Dinter) Oberm. (*Tosh* s.n., St Lucia, at E) the seeds are grey, as described by Obermeyer (loc. cit.) for this species.

It seems, then, that *T. smalliana* diverges from *Trachyandra* only in its smooth filaments; otherwise it possesses the key characters of *Trachyandra*



sect. *Liriothamnus* (Obermeyer op. cit. p. 717). *T. burkei* (Bak.) Oberm., which belongs to this section, is the only other species we have seen with netted leaf-bases similar to those of *T. smalliana*; however, it differs in its felted roots, short woody stems, branched inflorescence, maculate perianth and scabrid filaments. Furthermore, *T. burkei* is a psammophyte from the Kalahari sandveld of the north eastern Cape, north western Orange Free State and south western Transvaal; *T. smalliana* is a plant of damp, humus-rich soils in the Natal Drakensberg. There is no close relationship.

We are grateful to Mrs A. A. Mauve (A. A. Obermeyer), Pretoria, and to Mr W. Marais, Kew, for their comments on this plant, but the decision to describe it as a species of *Trachyandra* is our own. The success of our collecting work in the southern Natal Drakensberg owes an enormous amount to the help given us by Bill Small, Forest Officer at Cobham Forest Station, and his wife Alta. It is a pleasure to name this plant, one of the more exciting discoveries made in this area, *Trachyandra smalliana*.

**354. *Urginea tenella* Baker** in Thiselton-Dyer, Fl. Cap. 6: 464 (1897).

Type: Natal, Van Reenen's Pass, in crevices of rocks, 500ft, Wood 4562 (K).

NATAL. 2929 CA, Underberg distr., Garden Castle Forest Reserve, Pillar Cave Valley, c.6500ft, 4 xi 1977, *Hilliard & Burt* 10407 (E,NU); 2929 CB, 5-7 miles NNW of Castle View Farm, headwaters of Mlahlangubo River, c.7100ft, 22 xi 1980, *Hilliard & Burt* 13496 (E,NU). Bergville distr., near top of Tlanyaku Pass, c.9000ft, in crevices of basalt cliffs, 24 x 1973, *Hilliard & Burt* 6911 (E,NU).

LESOTHO. Oxbow Agricultural Camp, c.10000ft, on edge of tussocks, upper mountain slopes, minute, with few pinkish flowers, 19 xii 1967, *Williamson* 464 (K).

Jessop (in *J. S. Afr. Bot.* 43: 269, 1977) reduced *Urginea* to synonymy under *Drimia*, but we agree with Obermeyer (in *Bothalia* 13: 139, 1980) that it is better retained as a distinct genus. In the same paper, Jessop (op. cit. 302) reduced *Urginea tenella* to synonymy under a very wide concept of *Drimia modesta* (Bak.) Jessop, that is, *Urginea modesta* Bak.; they are, however, amply distinct. *U. tenella* usually has few flowers on pedicels c.10-15mm long (in living specimens the pedicels are spreading, but this is not always apparent in dried material); in *U. modesta*, the raceme is elongate, with many flowers on ascending pedicels c.2-8mm long. *U. tenella* appears to be confined to the Drakensberg Centre, where it grows in colonies in damp moss or soil in crevices of cliffs and in the seams and around the edges of rock sheets between c.1800 and 3000m. *U. modesta* may be found scattered on grass slopes in the same area as *U. tenella* and they flower at the same time, between September and December.

#### SCROPHULARIACEAE

**355. *Manulea buchneroides* Hilliard & Burt, species nova** cum *M. crassifolia* Benth. adhuc confusa sed inflorescentia primum corymbosa, floribus albis, corollae lobis latioribus planis distinguitur.

Herba perennis radice palari lignosa. *Caules* 1–3, c.35–4cm alti, simplices vel semel vel bis in parte inferiore furcati, glanduloso-pubescentes, distanter foliati. *Folia* pro maxima parte radicalia, 5–6 × 1–2cm, oblanceolata, apice obtuso, basi angustata petiolari, marginibus vel integris vel repandis vel obscure dentatis, utrinque glanduloso-puberula; folia caulina similia sed minora et sursum mox sessilia. *Inflorescentia* e racemo cymarum formata, primum corymbosa sero elongata; bracteae primariae lineares, c.6 × 1.5mm, ad basin pedunculi cymarum adnaeae, bracteae secundariae minores ad basin pedicelli adnaeae. *Pedicelli* brevissimi, glanduloso-pubescentes. *Calyx* 2.5–3.5mm longus, profunde 5-fissus; lobi subaequales, lineares, apicibus leviter conduplicatis, crassi, extra glanduloso-pubescentes. *Corolla* alba; tubus 7–8mm, leviter curvatus, superne dilatatus, extra glanduloso-pubescent, intus praeter barbas locales glaber; pili purpurei unicellulares clavati in filamentis duobus postero-lateralibus et in loco staminis postici aborti, pili similes sed incolorati in fauce et inter filamenta antica inventi; lobi 5, subaequales, 2–3 × 2–2.5mm, oblongo-obovati, obtusissimi, plani, patentes, albi basi pallide flavo-virides, supra glabri, extra praesertim in dimidio inferiore glanduloso-pubescentes. *Stamina* 4: 2 antica 4.5mm supra tubi basin orientia, filamentis 0.5mm longis pilosis, antheris rectis 1.5mm longis inclusis; 2 postero-lateralia 6.5mm supra tubi basin orientia, filamentis 1.5mm longis glabris, antheris transversis 0.5mm longis ore corollae visibilibus. *Ovarium* c.1mm longum; stylus c.1mm; stigma c.5mm. *Capsula* ellipsoidea, 5 × 2mm; semina numerosa, (paulo immatura) c.0.75mm longa, angulata, transverse lineata, alba.

Type: Orange Free State, Harrismith distr., Platberg, One Man Pass, c.1950–2100m, grassy places in pass, more rare on summit grassland, 13 xii 1976, *Hilliard & Burt* 9512 (NU holo.; E iso.).

Selected specimens:

ORANGE FREE STATE. Fouriesberg, 6000–6300ft, v 1932, *Brierley* 223, 236, 289 (BM). Ficksburg, Strathcona, 5600–6000ft, 7 x 1934, *Galpin* 13943 (K). Harrismith distr., c.5000ft, 9 xii 1893, *Wood* 7201 (K); Manyanya Mt, on both east (Natal) and west (O.F.S.) facing slopes, 5 i 1979, *Hilliard & Burt* 11951 (E,NU); Qwa Qwa Mt, above 'Bluegumbosch', 6200–6600ft, 8 i 1979, *Hilliard & Burt* 11978 (E,NU).

NATAL. Van Reenen, 5000–6000ft, 3 iii 1898, *Wood* 7201 (K).

LESOTHO. Berea distr., Leribe, 5000–6000ft, *Dieterlen* 24 (K); Matekas 6000ft, 22 iii 1951, *Guillarmod* 1266 (RUH-JG); Maklatsa's Nek, 6800ft, i 1948, *Guillarmod* 466 (RUH-JG); Mamathes, 15 iv 1949, *Guillarmod* 828 (RUH-JG).

E CAPE. Lady Grey distr., Witteberg, Joubert's Pass, 8 i 1979, *Hilliard & Burt* 12165 (E,NU). Barkly East distr., Witteberg, 'Beddgelert', c.7000ft, 16 x 1980, *Hilliard & Burt* 13162 (E,NU).

*Manulea buchneroides* takes its name from its striking resemblance to the white form of *Buchnera dura* Benth. We have found the plants growing together (the *Buchnera* on slightly damper ground) on Manyanya Mt on the border between Natal and the Orange Free State. It has required observation of the characteristic thick hairs in the corolla-mouth of the *Buchnera* to tell them apart.

This species has been found in herbaria under four or five different

names. Yet it is a well-marked species with constantly white flowers and very characteristic flat-topped inflorescences. Even when the inflorescences elongate with age the apical flowering part remains corymbose. The range of *M. buchneroides* almost forms a semi-circle round Lesotho and including the western parts of that country: it barely touches Natal on the Orange Free State border and although found on the Witteberg, it seems to be absent from the face of the Natal Drakensberg where the true *M. crassifolia* Benth. takes its place.

**356. *Manulea crassifolia* Benth.** in Hook. Comp. Bot. Mag. 1: 382 (1836) — excl. spec. witbergensi; Hiern in Fl. Cap. 4(2): 230 (1904) pro max. parte.

Lectotype: Cape, Albert div., Mooiplaats ('Moogplats'), *Drège* 7919b (K). Syn.: *M. thodeana* Diels in Engl. Bot. Jahrb. 23: 479 (1896); Hiern in Fl. Cap. 4(2): 230 (1904). Type: Orange Free State, Mont aux Sources, 7000–8000ft, *Thode* 72 (B†; probable iso. STE 8205).

Selected specimens:

E. CAPE. Middelburg distr., Compassberg, 6000ft, March, *Bolus* 1844 (K); Lootsberg Pass, 5500ft, 17 i 1957, *Theron* 2164 (K). Cradock distr., Bankberg, 24 i 1966, *Liebenberg* 7618 (K). Lady Grey distr., Witteberg, Joubert's Pass, 7700ft, 18 i 1979, *Hilliard & Burt* 1217b (E). Elliot distr., Saalboom Nek, c.6900ft, 21 i 1979, *Hilliard & Burt* 12263 (E,NU). Barkly East distr., Rhodes to Naude's Nek, 8600ft, 22 ii 1971, *Hilliard & Burt* 6704 (E,NU).

NATAL. Underberg distr., Cobham Forestry Station, c.5500ft, 19 iii 1977, *Hilliard & Burt* 9707 (E,NU); Sani Pass, c.7000ft, 6 i 1977, *Hilliard & Burt* 9620 (E,NU). Estcourt distr., Giant's Castle G. R., 18 ii 1964, *McKeown* 106 (E,NU). Bergville distr., Cathedral Peak, catchment 12, 6550ft, 20 ii 1951, *Killick* 1441 (K).

ORANGE FREE STATE. Witzieshoek area, foot of Sentinel, c.9000 ft, 22 i 1977, *Stewart* 1966 (E,NU); Chain ladder, Mont aux Sources, 10500ft, 22 ii 1926, *Bayer & MacLean* 246 (K,NU). Great Vet R., March, *Burke* (K). Harrismith, 7000ft, i 1905, *Sankey* 214 (K). Without locality, *Cooper* 2863 (K).

LESOTHO. Berea distr., Mamalapi, 9800ft, 26 xii 1948, *Guillarmod* 614 (RUH-JG). Maseru distr., Blue Mt Pass, c.9000ft, 13 i 1979, *Hilliard & Burt* 12097 (E,NU). Sehlabathebe, 2300–2500m, 4–14 i 1973, *Guillarmod, Getliffe & Mzamane* 10 (RUH-JG).

TRANSVAAL. Carolina, 5000ft, 20 xii 1907, *Burt* 7371 (K). Belfast distr., Dullstroom, 6800ft, 14 xii 1932, *Galpin* 13173 (K); 8 miles from Belfast on Stoffberg road, 20 xii 1964, *Burt & Scheepers* 2948 (E).

Bentham simply cited for this species 'Moogplats and Witbergen, *Drège*'. The specimen from Mooiplaats in his herbarium is labelled *Manulea crassifolia* in his own hand and bears the number *Drège* 7919b: we take this as lectotype. The plant from the Witteberg is numbered *Drège* 7919d. Long ago N. E. Brown noted, on the herbarium sheet, that this was not *M. crassifolia* and suggested that it belonged to *M. bellidifolia* Benth. because it has simple racemose inflorescences, whereas *M. crassifolia* has racemes of cymules. Hiern (in *Fl. Cap.* 4(2): 227, 1904) followed N. E. Brown in this,

but the plant is distinct from *M. bellidifolia* Benth. which is an annual found at much lower altitudes (see Harvey, *Thesaurus capensis* 2: 62 t. 197, 1866). We have re-collected Drège's plant in the Witteberg and it is described below as *M. dregei*.

Three specimens were distributed in the Drège collections as *M. crassifolia*. From his catalogue (*Zwei pflanzengeogr. Doc.*) they are localized as follows:

(a) I a 39. Stormbergen, in einer Fläche und Niederung, 5000–6000 Fuss, Dec.

(b) I a 56. Witbergen, an steinigen und felsigen Örtern und zwischen gräsern, 7000–8000 Fuss Höhe, Jan.

(c) II d 3. Nieuweveldsbergen bei Beaufort, 2000–3000 Fuss, Oct.

It is to be noted that Mooiplaats, the locality cited by Bentham for his specimen of Drège 7919b, is the station listed by Drège as I a 38, that is next to the station for the distributed *M. crassifolia* Benth. 'a'. It may well be that there was some slight confusion and that the distributed specimen is an isotype. It is represented at E and matches the type. The 'b' specimen now becomes *M. dregei*, as already mentioned. The 'c' specimen we have not seen.

In his comments on *M. crassifolia* Bentham wrote, 'Varies in height from three to four inches to a foot and a half.' It is the Witteberg specimen (*M. dregei*) that is short in stature: true *M. crassifolia* is always a foot or more high.

Hiern's concept of *M. crassifolia* was by no means clear. His quoted material includes both *M. buchneroides* and *M. florifera*, described here as new species; but he accepted *M. thodeana* Diels as distinct. The holotype of *M. thodeana* at Berlin has been destroyed, but there is a specimen in the Stellenbosch herbarium which is almost certainly an isotype. Basing our concept of *M. thodeana* on this specimen and on Diel's description, we have come to the conclusion that it cannot be separated from *M. crassifolia* and it is accordingly reduced to synonymy.

**357. *Manulea dregei* Hilliard & Burt, species nova** ab *M. bellidifolia* Benth. calyce paullo ultra medium (nec ad basin) diviso, corollae lobis angustioribus marginibus revolutis, ab *M. platystigmatum* Hilliard & Burt floribus solitariis simpliciter racemosis, stigmatum angustiore distinguitur.

Syn.: [*M. crassifolia* Benth. in Hook. Comp. Bot. Mag. 1:332 (1836) quoad spec. witbergense, excl. lecto.]

[*M. bellidifolia* auct. non Benth.; Hiern in Fl. Cap. 4(2): 227 (1904) quoad Drège 7919d tantum]

Herba perennis, caudice brevissimo rosulas foliorum 2–3 emittente. *Folia* omnia radicalia, plerumque 1.5–5cm longa, oblanceolata, ad basin petiolarem attenuata, apice obtuso, marginibus plus minusve serratis, utrinque glanduloso-puberula. *Inflorescentiae* axillares, 6–20cm altae, plures e quaque rosula, glanduloso-puberulae, parte basali (pedunculo communi) 7–12cm longo, parte florifera flores racemosos gerente; bractae c.3×0.5mm, summae paulo minores; pedicelli c.1.5–2.5mm longi. *Calyx* 3.5mm longus; lobi c.2mm longi, plus minusve oblongi, crassi, dorso rotundati, apicibus obscure cochlearibus, extra glanduloso-puberuli. *Corollae* tubus c.6mm longus, basi paulo dilatatus, superne valde dilatatus,

extra glanduloso-puberulus, intus pilis validis unicellularibus clavatis fuscis in fauce filamentisque exceptis glaber; lobi 5, subaequales,  $c.3 \times 1.75$  mm, elliptico-oblongi, obtusi, marginibus valde reflexis, ochracei vel brunnei, extra glanduloso-puberuli, intus glabri. *Stamina* 4; 2 postero-lateralia antheris transversis parvis in corollae ore visibilibus; 2 antica antheris rectis in tubo inclusis. *Ovarium* 1.5 mm longum, nectario unilateralis; stylus 0.75 mm abrupte expansus in stigma anguste lanceolatum 3 mm longum. *Capsula*  $5-6 \times 2-3$  mm, laete brunnea; semina  $c.0.75$  mm longa, pallida.

Type: E Cape, 3027 CB, Lady Grey distr., Witteberg, Joubert's Pass,  $c.7700$  ft, on bare gravel patches, flowers usually dull mustard yellow, rarely brown, 18 i 1979, *Hilliard & Burt* 12175 (E holo., NU iso.).

E CAPE. [Lady Grey distr.?], Witteberg, 7000-8000 ft, Jan., *Drège* 7919d (K). Barkly East distr., Rhodes to Naude's Nek, 7800 ft, 21 ii 1971, *Hilliard & Burt* 6671 (E, NU); Ben McDhui, iii 1904, *Galpin* 6805 (K).

As mentioned under *M. crassifolia*, the specimen collected in the Witteberg by Drège and cited under that species by Benth. does not belong there. But nor does it belong to *M. bellidifolia* Benth. where it was placed by N. E. Brown and by Hiern. The Drège specimen might have been regarded as an odd stunted plant while it stood alone, but we collected the type material from a sizeable population quite uniform for this habit, and the other citations show that the species is already known to range for some 50 miles across the mountains.

**358. *Manulea florifera* Hilliard & Burt, species nova** cum *M. crassifolia* Benth. adhuc confusa, sed habitu rhizomatoso, foliis pro maxima parte caulinis (nec radicalibus rosulatis), inflorescentia ramosa paniculata facile distinguitur.

Herba perennis, rhizomate lignoso subterraneo ad 8 mm diametro caules 1 vel plures erectos emittente praedita. *Caules* usque ad 1 m alti, infra inflorescentiis simplices, puberuli, praesertim in parte inferiore foliati. *Folia* opposita et decussata, inferiora ad  $20 \times 2.5$  cm sursum decrescentia et remotiora in bracteas transeuntia, anguste elliptica, utrinque attenuata, marginibus grosse vel interdum obscure serrata, praesertim in pagina inferiore glanduloso-puberula. *Inflorescentia* paniculam cymarum patentem formans, ramis ad 20 cm longis tenuibus glanduloso-puberulis; bracteae primariae ad  $c.10 \times 2$  mm, ad bases pedunculorum cymarum breviter adnatae; bracteae secundariae breviores ad bases pedicellorum perbrevium adnatae. *Calyx*  $c.1.5-2.5$  mm longus; lobi 5 tubo duplo longiores, plus minusve oblongi, apicibus paulo cochlearibus, valde carinati, glanduloso-puberuli pilis longioribus validioribus ad margines et ad mediam carinam restrictis. *Corollae* tubus  $c.4.5-6$  mm longus, basi paulo dilatatus, superne valde dilatatus, extra glanduloso-puberulus, intus pilis robustis unicellularibus clavatis in fauce et in filamentis exceptis glaber; lobi subaequales,  $2.5-3.5$  mm longi, oblongi, obtusi, marginibus planis, supra glabri, extra praesertim basin versus glanduloso-puberuli, albi vel pallidissime roseo-violacei. *Stamina* 4; 2 antica 4 mm supra tubi basin orientia filamentis 0.5 mm longis parce pilosis, antheris rectis 1 mm longis inclusis; 2 postero-lateralia sub ore tubi orientia filamentis fere 1 mm longis glabris, antheris transversis 0.5 mm, ore corollae visibilibus. *Ovarium*  $c.2$  mm longum, stylo et stigmate tenui  $c.6.5$  mm longo. *Capsula* ignota.

Type: Natal, Lion's River distr., Kamberg area, farm 'Allendale', wet grass slopes below sandstone cliffs (Molteno beds), 24 i 1978, *Hilliard & Burt* 11251 (E holo.; NU iso.).

NATAL. Nottingham Road, swampy ground, 4000–5000ft, flowers white, 31 x 1890, *Wood* 4397 (BM,E); Mooi River, Bray Hill, 15 i 1902, *Johnston* 799 (E). Estcourt distr., Highmoor Forest Reserve, c.7000ft, very handsome tufted perennial in grassland, flowers mauve, 18 ii 1968, *Hilliard* 4820 (E,NU).

The population from which the type material was collected showed some variation in flower-colour. The corolla was sometimes whitish (and then the outside of the tube was yellowish at the base), sometimes mauvish (and then the tube was purplish at the base). The big, graceful, paniculate inflorescences of *M. florifera* are very different from the stiff erect racemes of tight, almost sessile, cymes characteristic of *M. crassifolia*.

**359. *Sutera breviflora* N.E. Br. × *S. pristisepala* Hiern.**

Bushy perennial herbs, whole plant glandular-pubescent and gland-dotted as well. *Leaves* mostly 10–20 × 5–10mm, petiole up to 7mm long, blade oblong or ovate in outline, pinnatifid, the lobes bluntly toothed. *Flowers* solitary in the upper leaf axils, racemose. *Pedicels* 2–6mm long. *Calyx* 4mm long, 5-lobed nearly to base, lobes oblong, obtuse, with a callose mucro, but not toothed. *Corolla* c.16mm long, tube 10 × 2mm, cylindric, scarcely broadened under the limb, lobes oblong, obtuse, c.6 × 3mm, bright red-purple, yellow in throat and on palate, stamens 4, included, anthers filled with pollen. *Style and stigma* 5mm long. *Ovary* obovate in outline, 1.5 × 1mm. *Capsule* c.5 × 2.5mm; seeds oblong-oval in outline, 0.5mm long, dark red-brown, testa minutely reticulate.

NATAL. Underberg district, Sani Pass, c.2300m, bare ground above stream, flowers opening bright red-purple, fading a little, yellow in throat and on palate, mouth slightly compressed dorso-ventrally (cf. also 9827), 24 iii 1977, *Hilliard & Burt* 9826 (E,NU); ibidem, like 9826 in most respects but leaves much less cut, these two plants c.100 yards apart and the only putative hybrids found, parents nearby, 24 iii 1977, *Hilliard & Burt* 9827 (E,NU); Cobham Forest Reserve, Upper Polela Cave area, c.2300m, grass slopes below basalt cliffs, flowers magenta, yellow in throat, leaves softer than in *S. pristisepala*, two plants ¼ mile apart, but each with both parents within 1m, 13 ii 1979, *Hilliard & Burt* 12504 (E,NU).

The hybrid plants favoured *S. pristisepala* in their bushy habit, dissected leaves, and flowers running up into elongated racemes; the flowers were more or less intermediate between those of the two parents: shortly pedicelled (long pedicels in *S. breviflora*, more or less sessile in *S. pristisepala*), calyx-lobes obtuse, callose-mucronate (similar in *S. breviflora*, distinctly toothed in *S. pristisepala*), corolla-tube cylindric, scarcely broadened under the limb (funnel-shaped in *S. breviflora*, cylindric, abruptly expanded under the limb in *S. pristisepala*), corolla-tube about twice as long as the calyx (about equal in *S. breviflora*, three times as long in *S. pristisepala*); throat ± dorsoventrally compressed (similar in *S. breviflora*, laterally compressed in *S. pristisepala*) limb red-purple, yellow in throat (limb brick-red or terracotta, yellow in throat in *S. breviflora*, shades

of pale violet, mauve or whitish with darker lines, occasionally pale yellow in throat in *S. pristisepala*).

The hybrids appear to be fully fertile: no. 9826 had many old capsules filled with seeds, no. 9827, a younger plant, was setting seed, while no. 12504 had copious pollen and half-ripe seeds in the young capsules.

**360. *Sutera jurassica* Hilliard & Burtt, species nova** affinis *S. dentatisepalae* Overkott et *S. henrici* Hiern ab ambabus foliis pinnatifidis et corollis pallide violaceis in fauce luteis (nec albis in fauce aurantiacis) et corollae tubo calyci duplo (nec triplo) longiore facile distinguitur.

Herba perennis omnino glanduloso-pubescens et glandulis albis lucens, aromatica, radice palari longa valida et caudice parvo lignoso; rami ad 120mm longi, prostrati, foliati, tegetes parvas formantes. *Folia* opposita, c. 12–18 × 12mm, ad apices ramorum paulo minora, ovata, infra in partem planam petiolarem c. 4–6mm longam angustata, lamina bipinnatifida, lobis primariis utrinque 3–5 profunde dentatis, dentibus obtusis. *Flores* solitarii in axillis foliorum superiorum. *Pedicelli* c. 4mm longi. *Calyx* campanulatus, 5mm longus, tubo 1.5mm; lobi 5, 3.5 × 1–1.25mm, oblongi, apicibus rotundatis interdum dentibus 1–2 minutis instructis. *Corolla* 16mm longa, pallide violacea, lineis purpureis in lobis, in fauce lutea; tubus 8mm longus, 1.5mm latus sub limbo ad 2.5mm auctus, in fauce fascia lata pilorum unicellularum clavatorum praedita, labio inferiore 8mm longo superiore paulo brevior, lobis late ovatis, lobo antico 5 × 5mm postico 5 × 4mm. *Stamina* 4, duo posteriora 5mm supra tubi basin orientia filamentis 2mm longis, duo anteriora 7mm supra tubi basin orientia filamentis 0.7mm longis, omnia inclusa, sub antheris parce glandulosa; antherae 0.5mm longae, transversae. *Stylus* stigmate incluso 6mm longus. *Ovarium* ambitu obovatum, 1.75 × 1.25mm. *Capsula* 3 × 2.5mm, glanduloso-punctata, in calyce persistente occulta; semina ovalia 0.5–0.75mm longa, brunnea, minute reticulata.

Type: Lesotho, Sani Top, ridge north of mountaineer's chalet across the Sani River, 2900m, flat mats on shallow soil, flowers mauve, yellow in throat, purple median streaks on lobes, whole plant glandular, aromatic, 2 i 1974, *Hilliard* 5434 (E holo.; K, NU iso.).

LESOTHO. Black Mountains, 3170–3230m, prostrate, violet flowers with yellow mouth to tube, 13 i 1976, *Hilliard & Burtt* 8760 (E, K, NU); above confluence of Mangamay and Sani streams, c. 8000ft, blue flowers, 1935, *Milford* 730 (K); Sani Pass summit, c. 1–2km N of chalet, rare in alpine grassland, 2865m, prostrate herb with mauve flowers, with yellow centre, 13 i 1977, *Killick* 4087 (K, PRE).

The plants form small mats on bare gravelly or rocky ground and are very floriferous and pretty. *S. pristisepala* Hiern also grows on the summit plateau, sometimes near *S. jurassica*, but it favours rock sheets and cliffs, and is easily distinguished by its erect bushy habit, pinnatisect leaves, and flowers in clearly defined and elongated racemes. *S. jurassica* is so named because it is known only from the summit plateau of the Drakensberg, part of the old Jurassic landscape. *S. pristisepala* descends to lower altitudes and ranges widely along the face of both the high and the low Drakensberg.



**361. *Sutera montana*** (Diels) S. Moore in J. Bot. 38: 467 (1900); Hiern in Fl. Cap. 4(2): 262 (1904).

Type: Natal, Biggarsberg Range, bei de Taagen, x 1888, *Wilms* 1051 (BM). Syn.: *Chaenostoma montanum* Diels in Bot. Jahrb. 26: 121 (1899).

*Sutera luteiflora* Hiern in Fl. Cap. 4(2): 294 (1904). Lectotype: Natal, Colenso, *Wood* 4044 (K; iso. E).

*Sutera bolusii* Hiern in Fl. Cap. 4(2): 300 (1904). Type: Transvaal, near the Crocodile River, *Bolus* 7670 (K).

The material quoted by Hiern under *S. luteiflora* came from two areas: from the Newcastle-Colenso area of N Natal (whence came the type, and also the type of *S. montana*), and from the SE Transvaal near the Crocodile River (whence also came the type of *S. bolusii*). Hiern's key to *Sutera* is notoriously difficult and, despite their wide separation in this key, these three species cannot be satisfactorily distinguished.

UMBELLIFERAE  
(B. L. BURTT)

**362-366. *Alepidea*** F. Delaroche, *Eryngiorum nec non generis novi Alepideae historia*, 13 (1808); J. Gay in Ann. Sci. Nat. ser. 3, 9: 151 (1848); Sonder in Harv. & Sond., Fl. Cap. 2: 533 (1862); O. Kuntze, Rev. Gen. 3, part 2: 110 (1898); Dümmer in Trans. Roy. Soc. S. Afr. 3: 7-21 (Jan. 1913); H. Wolff in Engler, Pflanzenr. Umbellif. — Saniculoid. (Heft 61) 94-105 (Dec. 1913); H. Weimarck in Bot. Not. 1949 (4): 217-268 (1949); Cannon & Constance in Flora Zambesiaca 4: 567 (1978).

Type species: *A. ciliaris* Delaroche (nom. illegit.) quoad descr. excl. syn. (prob. tax. syn. *A. pilifera* Weim., see below).

The genus *Alepidea* has been revised no less than three times since Sonder's account (recognizing two species) in 1862: by R. A. Dümmer, published in January 1913, recognizing 23 species; by H. Wolff, published in December 1913, recognizing 19 species, and by H. Weimarck in 1949, recognizing 26 species (references above). Nevertheless many taxonomic problems remain in this difficult genus, and some part of the nomenclature needs to be overhauled. Also the additional material that has become available since Weimarck's revision now permits some taxonomic reassessments to be made.

*Typification of the genus.* The type species of a genus is that on which the generic description is based. In the text of his paper establishing the genus *Alepidea*, Delaroche first referred to the plant he was studying as *Astrantia ciliaris*, which can only be *Astrantia ciliaris* Linn. fil. He then established the genus *Alepidea* and the name *Alepidea ciliaris*. Unfortunately *Astrantia ciliaris* Linn. fil. is an illegitimate name because it included as a synonym the earlier *Jasione capensis* Berg.; therefore it cannot form the basis of a new combination. *Alepidea ciliaris* Delaroche is nomenclaturally a new name based on the same type; it, too, is illegitimate as Delaroche did nothing to exclude the synonym *Jasione capensis* Berg.; thus the nomenclatural type of *Alepidea ciliaris* is the same as that of *Jasione capensis*

(Thunberg in herb. Bergius, STB). This specimen has only spreading bristles at the tips of the leaf-teeth; the plant that Delaroché studied and illustrated had additional inflexed interdentine bristles and is currently judged to be distinct.

It is Delaroché's *plant* that is the type of his genus, not the wrongly cited name. R. A. Dyer (*Veg. Div. Albany & Bathurst, Bot. Survey Memoir* no. 17: 138, 1937) made the required new combination *Alepidea capensis* (Berg.) R. A. Dyer and correctly indicated that the name *A. ciliaris* could not remain in use for a different plant. However this view seems not to have been shared by Weimarck, who used *A. capensis* for the plant without interdentine bristles and *A. ciliaris* for that having them. Consequently *A. ciliaris* sens. Weim. seems to require a new name, as no synonym is cited for it in Weimarck's revision.

There is, however another factor to be considered. This is the taxonomic distinctness of *A. ciliaris* sens. Weim. in relation to neighbouring species. Available herbarium material has been considerably increased since Weimarck's revision and it is very difficult to draw a clear dividing line between *A. ciliaris* sens. Weim. and *A. pilifera* Weim. The key character that Weimarck used for their separation is that the free parts of the involucre bracts in fruit are 2–4 mm long in *A. ciliaris* but 6–8 mm in *A. pilifera*. Fruiting heads showing free bract-tips of 5 mm are easily found and I am not yet convinced that there are really two species here. Thus I am reluctant to give a new name to *A. ciliaris* sens. Weim. and place it, at least temporarily, as a taxonomic synonym of *A. pilifera* (see below). In effect I am following Dümmer, as he included Wood 5234, the type of *A. pilifera*, in *A. ciliaris*.

*Sectional names.* Weimarck recognized six sections within *Alepidea*. Under the current Code the one that contains the type species of the genus must be called sect. *Alepidea*. In accordance with the typification given above sect. 6 *Heterotrichae* becomes sect. *Alepidea*.

Five of Weimarck's sections are defined chiefly on leaf-characters and particularly on those of the marginal cilia. There is, however, some intergradation in the characters given. For instance, inflexed interdentine bristles are not uncommon in *A. woodii* (see below), despite its position in sect. *Homotrichae*, but they may be rare in *A. attenuata* (sect. *Heterotrichae*); Weimarck himself pointed out the heterotrichous nature of *A. acutidens* Weim. var. *dispar* Weim. (sect. *Homotrichae*). Thus the groups formed scarcely warrant recognition at sectional level.

On the other hand, Weimarck's first section, consisting of *A. amatymbica* Eckl. & Zeyh. and *A. macowanii* Dümmer, isolates two species that stand apart within the genus because the mericarps are smooth on the back. Throughout the rest of the species they are rugose. Weimarck named this section *Laevicarpiæ* in his key (op. cit. p. 218), but on the next page it appears, with diagnosis, as sect. *Leiocarpiæ*. The latter form is preferable and is maintained.

It is suggested that for the present only sect. *Alepidea* and sect. *Leiocarpiæ* be given formal recognition. Whether Weimarck's other sectional names are eventually maintained at a lower rank must await a full revision of the genus.

*Specific names published by O. Kuntze.* Several varietal epithets under *Alepidea ciliaris* were validly published, with a key, by O. Kuntze (*Rev. Gen.* 3(2): 110, 1898). On the next page he suggested that they might be better treated as species and should then be known as *A. baurii* . . . &c. (writing each varietal epithet as a binomial). These names have been accepted as species names, but they are not validly published. At species level these are provisional names and thus have no standing under the International Code (Art. 34, 1(b)). The point of particular importance is that *A. ciliaris* var. *baurii* O. Kuntze was not validly published here in species rank: that did not occur until R. A. Dümmer's revision in 1913. It must yield to the earlier *A. natalensis* Wood & Evans (see under that species below).

**362. *Alepidea cirsiifolia*** Schlechter & Wolff in Wolff, Pflanzenr. Heft 61, Umbell. — Saniculoid. 99 (1913); Weimarck in Bot. Notiser, 1949, 261 (1949).

Type: [Transkei] Tsitsa River, *Schlechter* 6375 (n.v.)

Syn.: *A. cirsiifolia* Schinz in Vierteljahrsschrift Nat. Gas. Zürich, 62: 678 (1917). Type as above.

*A. schlechteri* Hiroe, Umbell. World, 614 (1979). Type as above.

TRANSKEI. Tabankulu distr., Tabankulu Mt, c.4000ft, 7 i 1966, *Hilliard & Burt* 3517 (E,NU); ibidem, 16 ii 1971, *Hilliard & Burt* 6510 (E,NU).

Hiroe's new name, *A. schlechteri*, was proposed to replace *A. cirsiifolia* Schlechter & Wolff (non Schinz). This was quite the wrong treatment, as Schinz's name is the later one. However no new name is necessary for either, as both are based on the same type: Schinz obviously published the name he found on a specimen, without being aware that Schlechter & Wolff had already done so.

The two specimens cited above are certainly *A. cirsiifolia*. Another (Transkei, Tsolo distr., Ntywenka, 4500ft, 29 i 1966, *Hilliard & Burt* 3741, E,NU) has deeply lobed leaves and approaches some specimens of *A. serrata* Eckl. & Zeyh. from Katberg. The distinction between the two species is very uncertain. Both have been recorded from the Cala-Engcobo area and that might be a good place for critical study.

**363. *Alepidea longifolia*** [E. Mey. ex] Dümmer in Trans. Roy. Soc. S. Afr. 3: 8 (Jan. 1913); Wolff in Pflanzenr. Umbellif. — Saniculoid. (Heft 61) 98 (Dec. 1913).

Lectotype: [E Cape, Komga distr.] zwischen Zandplaat und Komga, *Drège* (K; isolecto. E).

Syn.: *A. gracilis* Dümmer var. *major* Weimarck in Bot. Notiser, 1949: 224 (1949). Lectotype as above.

The name *Alepidea longifolia* was proposed by E. Meyer for plants collected by J. F. Drège, but he published no description of it. In *Flora Capensis* Sonder regarded it as a synonym of *A. amatymbica* Eckl. & Zeyh., but it was soon realized that this was not so, and for many years *A. longifolia* E. Mey. was in use while still technically *nomen nudum*. In 1899, for instance, Wood & Evans published a new species, *A. natalensis*, and gave the characters that differentiated it from *A. longifolia*, without giving

any descriptive information on that plant. R. A. Dümmer was the first to supply a validating description of *A. longifolia* in 1913. Wolff also described it later that year and both Dümmer and Wolff included in the material cited the specimen collected by J. F. Drège between Zandplaat and Komga (Eastern Cape), one to which E. Meyer had originally applied the name. This is clearly the best choice for lectotype. The name should be cited as *A. longifolia* [E. Mey. ex] Dümmer.

Weimarck adopted a new concept of the species, and transferred nearly all the material cited by Dümmer (including the Drège specimen mentioned above) to *A. gracilis* Dümmer var. *major* Weimarck. '*A. longifolia* E. Mey.' was retained as a polymorphic species with six subspecies, one of which, subsp. *comosa* (Dümmer) Weimarck, was regarded as typical. Weimarck (op. cit. p. 230) remarked, it 'represents the original type of *A. longifolia* according to Drège's specimens kept in different herbaria'. His only citation of Drège specimens under *A. longifolia* was of unlocalized specimens at Geneva, Kew and Paris. As these sheets had not been quoted by Dümmer when he validated the name, we cannot take Weimarck's comment as effective lectotypification. Weimarck did not indicate a type specimen for his *A. gracilis* var. *major*, but this variety is so clearly the true *A. longifolia* as to much of the material cited that it will simplify the situation if the specimen collected by Drège between Zandplaat and Komga is chosen as lectotype. The two names are then homotypic.

The main difference between *A. gracilis* and *A. longifolia* has been said to lie in *A. gracilis* having acuminate and *A. longifolia* acute bracts. It is becoming increasingly clear that differences in bract shape are unreliable specific characters, and the limits between these species and their various varieties and subspecies recognized by Weimarck are quite unclear. Correct lectotypification of *A. longifolia* is necessary to give a firm starting point for the study of this problem.

**364. *Alepidea natalensis*** Wood & Evans in Journ. Bot. 37:255 (1899); Dümmer in Trans. Roy. Soc. S. Afr. 3: 18 (Jan. 1913); Wolff in Pflanzenr. (Heft 61), Umbellif.—Saniculoid. 100 (Dec. 1913).

Type: Natal, Lion's River distr., Mt Gilboa, ii 1894, *Wylie in Wood* 6243 (NH holo.; K iso.).

Syn.: *A. ciliaris* var. *baurii* O. Kuntze, Rev. Gen. 3(2): 110 (1898). Type: Transkei, Umtata, Baziya, *Baur* 116 (K).

*A. baurii* (O. Kuntze) Dümmer in Trans. Roy. Soc. S. Afr. 3: 17 (Jan. 1913); Wolff in Pflanzenr. (Heft 61) Umbellif.—Saniculoid. 99 (Dec. 1913); Weimarck in Bot. Not. 1949: 251 (1949).

Both Dümmer and Wolff maintained *A. natalensis* and *A. baurii* as distinct species. For the present it seems better to adopt Weimarck's rather broader concept and to accept them as conspecific. As pointed out above (p.295) *A. baurii* was not validly published until Dümmer's use of it in his revision of 1913; *A. natalensis* therefore takes precedence.

**365. *Alepidea pilifera*** Weim. in Bot. Not. 1949, 256, tab. 5 (1949).

Type: Natal, Nottingham Road, *Wood* 5234 (Z holo.; K, NH iso.).

Syn.: ?*A. ciliaris* Delaroche, Eryng. Alepid. hist. 13, 67 tab. 1 (1808), nom.

illegit., quoad descr. et fig. excl. syn; Dümmer in Trans. Roy. Soc. S. Afr. 3: 12 (Jan. 1913); Wolff in Pflanzenr. Umbell.-Sanic. (Heft 61), 103 (Dec. 1913) pro parte; Weim. in Bot. Not. 1949, 19 (1949).

The synonymy is discussed above under lectotypification of the genus.

**366. *Alepidea woodii*** Oliv. in Hook. Ic. Pl. t. 1452 (1884); Dümmer in Trans. Roy. Soc. S. Afr. 3: 11 (Jan. 1913); Wolff in Pflanzenr. Umbell.-Sanic. (Heft 61), 99 (Dec. 1913).

Type: Natal, Byrne, 3000ft, *Wood* 1845 (K).

Syn.: *A. tysonii* Dümmer in Trans. Roy. Soc. S. Afr. 3: 12 (Jan. 1913); Weimarck in Bot. Not. 1949, 237 (1949). Type: [Natal] Griqualand East, on stony slopes about Kokstad, 4300–4500ft, *Tyson* 1465 and in *herb. afr. austr.* 1275 (K).

These two species were distinguished by Dümmer, and following him by Weimarck, only because *A. tysonii* was said to have acute, *A. woodii* obtuse involucre bracts. However Weimarck cites *Galpin* 11992 under *A. tysonii* though it comes from Byrne, the type locality of *A. woodii*: *Stewart* 1750, from Byrne also has the acute bracts of *A. tysonii*. On the other hand Weimarck accepts *Schlechter* 6560 as *A. woodii*, as it had been determined by Wolff; this comes from the Umzimhlava River which flows through Kokstad, from which neighbourhood came the type of *A. tysonii*. Thus there is no geographical separation to reinforce the frail morphological distinction. The combined species is variable, and may have almost sessile or long petiolate radical leaves, but this is probably dependent on whether plants grow on bare stony ground or in grass. The soft-textured leaves, characteristic amplexicaul cauline leaves, and the small umbels surrounded by bracts that are greenish-white rather than silvery inside give the species a characteristic facies.

**367. *Peucedanum upingtoniae*** (Schinz) Drude in Engl. & Prantl, Nat. Pflanzenfam. 3 (8): 237 (1898).

Type: Upington, *Schinz* 1033 (Z).

Syn.: *Lefebvria upingtoniae* Schinz in Bull. Herb. Boiss. 2: 206 (1894); Engler, Pflanzenwelt Afrikas 3 (2), 829 (1921); Merxm., Prodr. Fl. S. W. Afr. 103: 6 (1967).

*Peucedanum venosum* Burt Davy in Man. Fl. Pl. Ferns Transvaal 2: xxviii & 520 (1932). Type: E Transvaal, Masotane, near Shilouvane, *Junod* 1361 (K).

*Peucedanum dinteri* Wolff in Fedde, Rep. Sp. Nov. 17: 153 (1921). Syntypes: SW Africa, Outja & Otawiberg, *Dinter* 2636, 758.

NATAL. Hlabisa distr., Hluhluwe, upper catchment of Manzibornvu and Mansiya streams, c.1700ft, 12 iii 1962, *Ward* 4055 (E,NU,PRE).

I use this name as a temporary expedient. Cannon (in *Fl. Zam.* 4: 613 1978) adopts *P. angolense* (Fic.) Cannon in a wide sense to include *Lefebvria welwitschii* Engl., *L. benguellensis* Engl., *L. microcarpa* H. Wolff and *Peucedanum buchananii* Bak. That covers a wide range of leaf-form and fruit size. Cannon also mentions that *P. upingtoniae* is the S African representative of this group. However, if he is correct in giving *P.*

*angolense* such a wide coverage, it seems quite likely to me that *P. grantii* Oliv. should also be included, and this would provide the earliest name. Norman (in *Journ. Linn. Soc. Bot.* 49: 504, 1934) long ago noted that *P. upingtoniae* is related to *P. grantii*, and Burtt Davy gave the same affinity for *P. venosum*. There is nothing to show that Burtt Davy ever compared his species with *P. upingtoniae*. The whole group, which seems to be rather thinly spread over a very wide area, needs critical study.

Ward's specimen was originally determined as *Pastinaca sativa*; efforts to re-find this plant where it was collected by Ward have been made by Mr I. A. W. Macdonald of the Hluhluwe Game Reserve (Natal Parks Board), but without success. Unfortunately Ward's collection lacks ripe fruit, and fruit size and shape will clearly be important in unravelling this group. The species has not previously been recorded for Natal. In southern Africa it is known from Dinter's localities in SW Africa, from Upington in northern Cape Province, and from a very few localities in the eastern and north-eastern (Zoutpansberg) Transvaal.